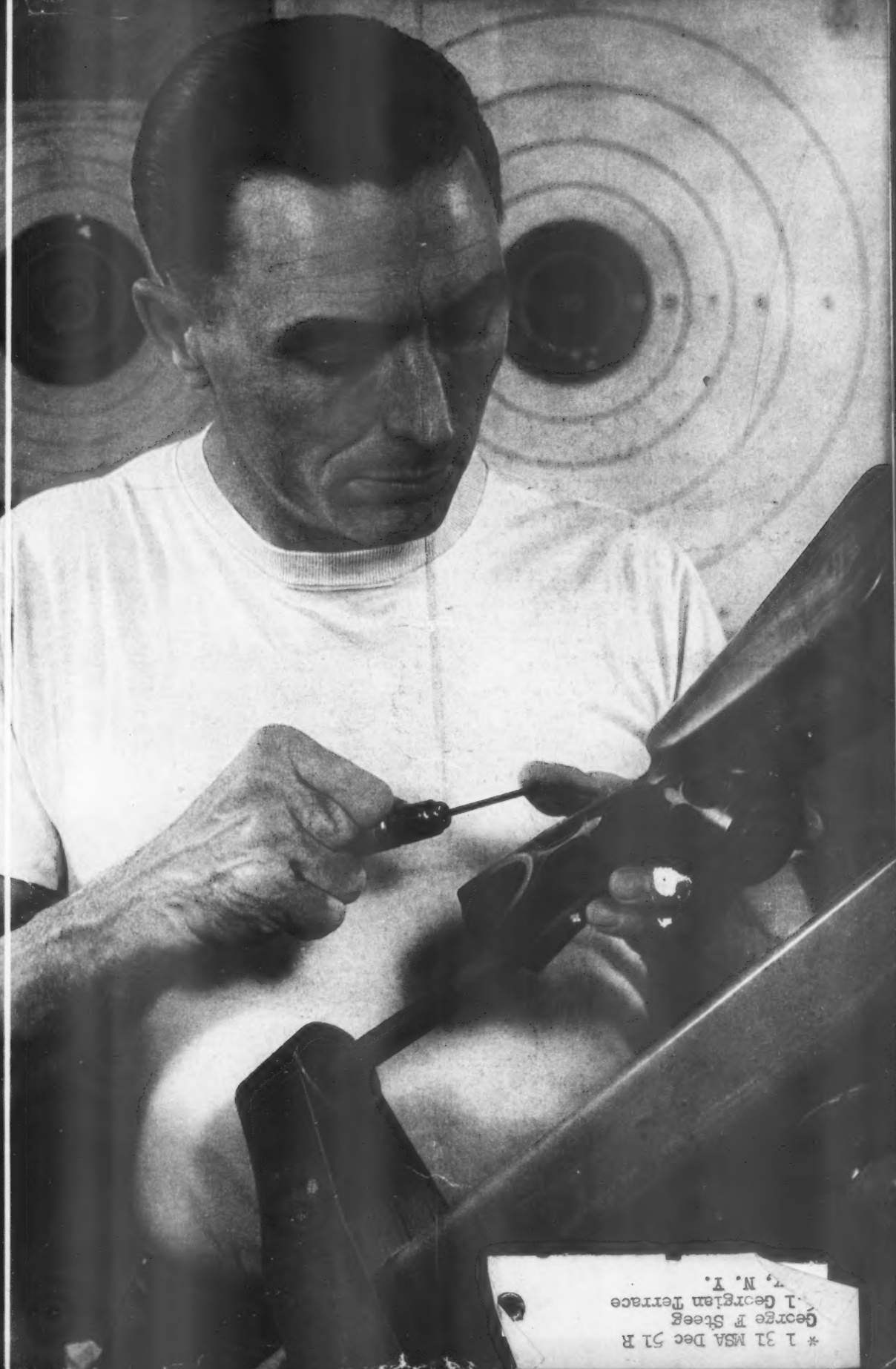


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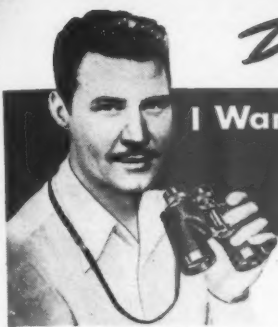
COVER

D. J. "Monty" Kennedy, a well-known professional stockmaker, shows how he checks a stock in the picture story (page 16) by Robert D. Emmons. Emmons also made the color picture of Kennedy which appears on the cover.



Published monthly by the NATIONAL RIFLE ASSOCIATION OF AMERICA, 1600 RHODE ISLAND AVENUE, WASHINGTON 6, D. C. Domestic Rates (North, South, and Central America) \$4.00 a year, \$7.00 for two years, \$10 for three years; elsewhere add \$.60 per year for foreign postage. Entered as second-class matter, April 1, 1908, at the post office at Washington, D. C. under act of March 3, 1879. Copyright, 1951, National Rifle Association of America. All rights reserved. For change of address, give both new and old address as the latter appears on address label. Not responsible for loss or damage to unsolicited manuscripts or photos.

Dave Bushnell says...



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THE OTHER NIGHT I was showing a Rifleman friend of mine some snapshots taken in Yellowstone Park. Several of these caught a herd of elk in the act of fording the Yellowstone River. But the elk were so far away, they might just as well have been Texas longhorns from all you could see in the picture.

"That's the trouble with most amateur camera fans," said my friend (who is also an expert photographer), "you don't get close enough to your target before you snap the shutter."

And that's the reason, I guess, that most of us miss a heap of pleasure on our vacations. We don't get close enough to observe in detail all the scenery, colorful birds, wild animals, and the wonders of nature, so plentiful, yet almost invisible to the naked eye.

Chances are, you'll spend many dollars and drive hundreds of miles on your vacation this year; so doesn't it make sense to be sure you see all there is to see by taking along a pair of Bushnell Binoculars!

No doubt you're planning to buy binoculars anyway for the hunting season—so why wait! Get them now, and start enjoying them immediately—on your vacation, and throughout the summer months. You will find them as valuable as your camera and rifle.



Perhaps you have a good friend who is going abroad, or into the armed services. Or possibly some member of your family is celebrating a birthday or anniversary this summer. If so, you may wish to use a convenient BUSHNELL GIFT CERTIFICATE. If you, or anyone you know, wish advice in choosing the right model, just write to me, and the recommendations of our Advisory Panel will be sent by return mail, without obligation. (Prices of Microscopes, Telescopes, etc. on request.)

P.S. *Dave Bushnell*
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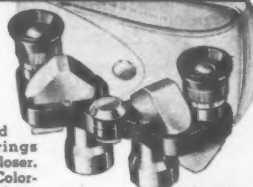


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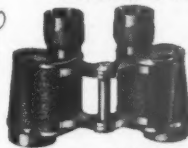
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C. B. LISTER

Washington, D. C.

Editor:

With the untimely death of Mr. Lister, the NRA, in which numerous Marines are proud to claim membership, suffers the loss of one of its most distinguished members. As Secretary and Executive Director of the Association, Mr. Lister was instrumental in building the Association's membership from a token 3500 in 1921 to its present membership of over 275,000. He was untiring in his efforts to encourage marksmanship training among the youth of our country. His contribution to the promotion of competitive shooting bore much fruit in our training camps and on the battlefields in World War II and during the present national emergency.

Marines everywhere are proud to salute the memory of C. B. Lister, an exemplary American.

C. B. CATES

General, U. S. Marine Corps
Commandant of the Marine Corps

Ottawa, Canada

The Dominion of Canada Rifle Association has just learned with most sincere regret of the passing of C. B. Lister, Executive Director of the NRA of America. . . . He gave a long and distinguished service to his country and his wise counsels will be sadly missed.

COLONEL R. J. BIRTWHISLE, Secretary
The Dominion of Canada Rifle Association

Knoxville, Tennessee

Lister has devoted his life to the NRA and the promotion of rifle practice in this country. He has made an outstanding success of his work and the riflemen of America will greatly feel his passing for many years to come. . . .

FRANK MALONEY, President
Great Smoky Mountains
Conservation Association

Minneapolis, Minnesota

. . . His death leaves a great gap in our field of publishing.

TED KESTING, Editor
Sports Afield

Hicksville, New York

. . . He has left behind him too fine a record of achievement in the development of the NRA and too many splendid editorials in the AMERICAN RIFLEMAN to be soon forgotten.

V. B. CLEAVER
The Gunners Club of
Long Island, Inc.

Surrey, England

. . . Mr. C. B. Lister . . . has left his mark on the United States; under his guidance the NRA has become a power in your great country.

A. J. PALMER, Secretary
National Small-Bore Association

Washington, D. C.

Unquestionably the nation has lost one of its outstanding leaders in organization work . . . Mr. Lister's successful efforts to bring

the NRA to its present enviable position is well known throughout the country.

S. L. FROST

The American Forestry Association

Kokomo, Indiana

. . . Since my first contact with the Association, while attending President William McKinley's first inauguration, there has not been a man on the Association staff more dynamic and honored.

DR. H. A. KELSEY

St. Louis, Missouri

Mr. Lister . . . did a world of good for the entire shooting industry . . .

HUGO G. AUTZ, Editor
The Sporting Goods Dealer

Joplin, Missouri

The members of the Joplin Rifle and Pistol Club . . . appreciate his great ability, his splendid service to the NRA, and his unselfish devotion to his duties and to the Association. A man of finest character . . .

FRANK B. NEWTON, President
Joplin Rifle & Pistol Club

Opportunity, Washington

. . . Mr. Lister . . . had . . . a strong influence in the operation of organized shooting all over the world . . . (and) the good of clubs such as ours all over the nation. . . .

G. P. FISHER, Secretary-Treasurer
Spokane Valley Rifle & Pistol Club, Inc.

Los Angeles, California

. . . Even those of us who did not know Mr. Lister personally feel that we have lost a great friend.

MARY C. ALTON, Secretary
Los Angeles Gun Club

Springfield, Massachusetts

The good things which Mr. Lister stood for and worked so hard for, such as the organization of the shooting game, the preservation of citizens' rights, and that outstanding magazine, the RIFLEMAN, all stand as the truest monument to his life. For his part in the solid development of these activities, we are all indebted.

Speaking personally, as well as President of the United States Revolver Association, I should like to express appreciation for the significant and lasting contribution which Mr. Lister has made to the shooting game and to the cause of National preparedness for the emergencies of our day.

DR. ALEXANDER LESLIE, President
The United States Revolver Association

Cleveland, Ohio

Mr. C. B. Lister's . . . down to earth philosophy of life, so well presented in his editorials in the RIFLEMAN, will indeed be a loss. . . .

RAY T. BAYLESS

Plymouth, Michigan

. . . the NRA has lost not only a loyal and able leader but a real friend, as have many thousands of shooters everywhere.

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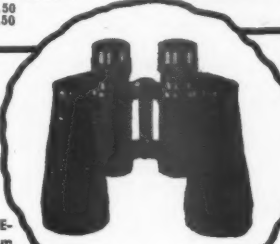
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P. H. TEACHOUT, Editor
Shooter's News

Greeley, Colorado

C. B. Lister was a mighty good friend. . . I always left (him) with the feeling that he thought my interests and feelings were more important than his own. The ability to convey that impression is a gift not many people have. He gave advice only when it was asked for, and the advice was always good.

Many of us will remember that friendly smile, pipe and all, for a long time.

G. E. DAMON
Asst. Professor of Business Education
Colorado State College

ARMY MARKSMANSHIP

Minneapolis, Minnesota

Editor:

Will you please send me eleven copies of the article entitled "Marksmanship and the U. S. Army", which appears on page 14 of the June 1951 issue of the AMERICAN RIFLEMAN. I wish to send a copy of this article to each of the Minnesota Senators and Representatives in Washington.

G. V. THOMSON

Newark, Ohio

Editor:

Some time back I saw where a machine-gun crew in Korea had seen Reds changing from uniform to civvies out of range of them. At the time I thought perhaps they might have had orders not to shoot, or had been short of shells. After reading "Marksmanship and the U. S. Army", it seems there might have been another reason. Perhaps they thought the range markings above 500 on their sights were just window dressing, as with the old Tommy gun long-range marks.

JOHN P. CONLON

New York, New York

Editor:

Paul Cardinal is to be congratulated upon his article, "Marksmanship and the U. S. Army", in the current RIFLEMAN!

W. H. DEPPERMAN

Worcester, Mass.

Editor:

Mr. Paul Cardinal states that the Army is now stressing volume of fire instead of accuracy of fire. This is readily confirmed by seeing such weapons in use as the U. S. M-3 'grease gun' which actually sprays a short ranged target.

Yet we are not the only ones who have abandoned marksmanship in favor of volume of firepower. A look at some of the Russian gaspipe guns captured in Korea shows that both the Russians and Chinese Reds now feel as we do about accuracy of fire.

Since this attitude now prevails, the old tradition of good marksmanship dies hard.

M. N. HOECHSTETTER

JUNE COVER

Solano, New Mexico

Editor:

That June issue of the RIFLEMAN was a humdinger, especially the picture of the coyote on the cover and the articles by Moyer and McQueary. . . .

The coyote is easily the best game animal going, and if left alone, except for hunting and trapping, would furnish more hunting for more hunters than any other. . . .

BRADLEY UPTON

IMPROVED HENRY

New Haven, Connecticut

Editor:

We were very much surprised to learn in the article "Pump Action Repeater" by A. Engelhardt in your May issue that an "Improved" Henry Rifle, predecessor of the Winchester Model 1866 lever action repeating rifle, should occasion so much mystery when all of the facts about this particular rifle could have been obtained from us on inquiry.

The rifle itself is no mystery. It is the "Improved" Henry, an example of which we have in our Gun Museum.

As you probably know Winchester is more closely identified with the history of the lever action repeating sporting rifle than any other arms company on earth. While the Winchester type of lever action is traced back to Walter Hunt's "Volition Repeater" (Patent No. 6663), thence to the Jennings and Volcanic, it became successful only after Oliver F. Winchester formed the New Haven Arms Company and hired B. Tyler Henry to make it practical. Henry's development of the .44 flat rim-fire cartridge is well known, and it is equally known that the Henry rifle of 1860 became the Model 1866 Winchester (the first to bear the Winchester name) by the addition of the loading port invented by King.

The particular rifle which has caused Mr. Engelhardt so much concern was the last variation of the Henry, called the "Improved" Henry, which was followed by the Model 1866 Winchester.

In the gun collection here at the plant there is a similar rifle in which the action is the same as in the regular production Henry. However, the magazine tube is closed all the way around and provided with a sliding cover at the breech end to provide a means of opening in order to fill it. Also, in the catalogue of the New Haven Arms Company issued in the Fall of 1865, there are a number of testimonial letters from men who were using the Henry at that time. In these letters reference is made to objections to the rifle that had existed in the manner in which the magazine tube was constructed with the open slot in it. In these same letters, reference is also made to improvements which had overcome these objections. Then, in the catalogue of the Winchester Repeating Arms Company for 1867, on page 50, are the following letters.

Washington, D. C.

Oct. 18th
1865

O. F. Winchester, Esq.,

President N. H. Arms Co.

Sir:—Having devoted much time and study to the subject of rifles, and being familiar with nearly all the arms made in this country and Europe, I am free to say that your Magazine Rifle, with the recent improvement, is superior to any other arm ever presented to the public. Its mechanism is

Lyman

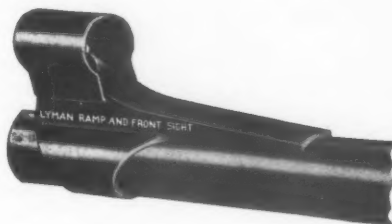
accurate sight combinations for your CONVERTED MILITARY RIFLE

To gain the greatest accuracy from a converted military rifle, special combinations of Lyman Sights are available which are designed to make your gun a superbly accurate hunting or target rifle.

Combining a Lyman 48 or an inexpensive Lyman 57 micrometer receiver sight with the correct front sight for your rifle is your best insurance of good shooting!



48 Sights are made for hunting and target shooting, and built to last a lifetime. They have quarter minute micrometer click adjustments for windage and elevation. The slide assembly is easily removed when using a scope. All graduation markings on adjusting knobs are clear and visible . . . coin-slotted Stayset Knobs are available for hunting.



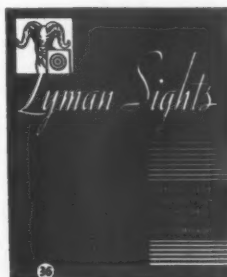
Ramp and Front Sight with detachable hood is especially helpful to gunsmiths and shooters who are remodeling Krag, Russian 7.62 M/M, Springfield, Mauser and Enfield 1917 Service Rifles. Military rifles are accurate for range or field shooting when equipped with this front sight assembly. Streamlined in appearance, it's a useful addition for greater accuracy on the rifles listed above.



57 Sights feature modern, compact design. These low-cost, attractive sights are unexcelled for inexpensively converting your military rifle to an accurate target or hunting rifle. 57 Sights have 1/4 minute adjustments for windage and elevation, and quick-release slide assembly. Stayset Knobs when specified.

Lyman 48 and 57 Sights are ideal for all popular bolt action rifles.

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MIDDLEFIELD, CONNECTICUT



Send 10c for the new, larger, better-than-ever Lyman Catalog of products for shooters. It has complete charts to make selecting your proper sight easy. It's loaded with helpful tips and shooting suggestions. Write today for your copy!

CHOOSE

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ALL the desirable features

FINEST HUNTING SCOPES MONEY CAN BUY

Field-tested LEUPOLD SCOPES are the only truly all-weather scopes on the market today. Exclusive nitrogen processing gives clear, bright images rain or shine, heat or cold, at any altitude. Rugged, streamlined tube mounts extra-low on all high-powered bolt actions.



300 Weatherby
Magnum custom-
built rifle with birds-
eye maple stock—bas-
ket weave checkering, in-
lays of pearl and ebony.
Equipped with LEUPOLD 4X
PIONEER SCOPE on the LEU-
POLD ADJUSTO-MOUNT

Ideal All-Purpose Hunting Scope LEUPOLD 4X PIONEER

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- Choice of 5 fixed reticles always centered.
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- Backed by lifetime service repair guarantee.

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All the advantages of the LEUPOLD 4X PIONEER plus internal elevation adjustment makes the new 4X RIFLESCOPE first choice of particular riflemen.

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- Protective cap on elevation dial.
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- One click gives 1/2 in. elevation shift at 100 yds.
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of the simplest and most compact kind, and it performs more operations, with the same number of movements, than any other arm in the world.

With the improvement in the magazine, it may be considered the perfection of a fire arm. It is a monument alike to the genius of its inventor, and the skill of the artisans employed in your establishment, of which every true American, in common with your Company, may well feel proud. With such arms in the hands of our patriotic citizen-soldiery, we may bid defiance to the nations of the earth.

Trusting that our Government may appreciate its importance, and prevent its going abroad by adopting it at home,

I remain sincerely yours,

W. C. DODGE

Late Examiner U. S. Patent Office

Danvers, June 10th, 1865

O. F. Winchester, Esq.

Dear Sir:—I have just returned from the Rifle Conference at Washington, Conn., where I had the pleasure of meeting Mr. Chapin of Bridgeport, and of seeing the improved Henry rifle, and I cannot refrain from expressing to you the pleasure I have derived from witnessing its admirable operation and its powerful and accurate shooting. Mr. Chapin explained to me a further proposed improvement which will do away with the necessity for any detached piece, and which will render it, in my opinion, the most perfect repeating rifle in existence.

You will, perhaps, remember that I always expressed my admiration of the ingenuity and excellence of its mechanical construction, and my hope and belief that the objectional features might be overcome, and I feel it to be due to you to express my conviction that this has now been accomplished.

Very truly yours,
H. W. S. CLEVELAND

You will notice that the first of these two letters is signed with the same name that appears on the rifle owned by Mr. Engelhardt. The fact that W. D. Dodge was connected with the U. S. Patent Office would make him a very logical person for the New Haven Arms Company to have presented with an Improved model of their rifle. I do not believe that this type of the Henry rifle was ever produced on a real production basis, but were made up as model guns and as presentation pieces to be given to people who might use their influence to help in the general acceptance of the rifle and the promotion of sales.

Also notice in the second letter, 'Mr. Chapin explained to me a further proposed improvement' (the loading gate in the side of the receiver) 'which will do away with the necessity for any detached piece,' (the movable cover at the base of the magazine) 'and which will render it, in my opinion, the most perfect repeating rifle in existence.'

By April of 1866, the Winchester Model '66 was in production, thus making the Henry rifle obsolete.

J. T. BOONE

Ass't Sales Manager—Arms & Amm.
Winchester Repeating Arms Company
Division of Olin Industries, Inc.



Dragging a PPSH 1941 submachine gun, Russian officer instructs his men in Indian-style approach technique (Sovfoto)

Omnipresent PPSH 1941 and a ground-modified DT Degtyarov in World War II service. Note cruciform carrier on table holding biped legs of Degtyarov (Sovfoto)



Russian

SMALL ARMS

The army of the Soviet Union is equipped with reliable, functional weapons, including several which are the ultimate in small arms simplicity



Tokarev 1940 rifles of both patterns were seen in Revolution parade of 1948 (Sovfoto)



Men of Siberian ski battalion (Yakutsk) shooting 1891/30 Moisin-Nagants equipped with long bayonet (Sovfoto)



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IN THE SOVIET concept of warfare, the function of the army is to advance until the battle is decided. Closely supported by artillery and tanks, Russian infantry is expected to advance without halting until the entire depth of enemy positions has been penetrated. Heavy artillery fire precedes an attack. Tanks fight side by side with the infantry, over-running centers of heavy resistance and punching holes into enemy lines through which the infantry can advance. The Soviet army is geared to overrun an enemy.

A Soviet infantry division of 9,300 men is made up of three infantry regiments, one artillery regiment, one anti-tank group, one battalion of engineers, and one communications company. Each infantry regiment consists of nine rifle companies, one company of submachinegunners, one gun battery, one anti-tank battery of six weapons, one detachment of 27 anti-tank rifles, one mortar company, and one pioneer company.

The infantry is armed with three shoulder weapons: the 1891/30 Moisin-Nagant bolt-action rifle, the Simonov model 36 semiautomatic rifle, and the Tokarev model 40 semiautomatic rifle. The 1891/30 is a version of an action which is over sixty years old. The Simonov has been in use since 1936, and the Tokarev since 1940.

Essentially the Russian 1891/30 rifle is a manually-operated

officially adopted by Russia as the Model of 1891 rifle.

However, in spite of contract manufacture of the arm at Châtellerault in France, and in spite of extensive tooling up at Tula Arsenal, it was not until about 1895 that enough 1891s were on hand to permit their issue as the prime standard weapon.

Russian rifles and carbines on the basic 1891 action have been produced in a variety of designs. In general, those made before the Red Revolution may be distinguished from those made subsequently by a receiver ring octagonal in section, later weapons having a round ring. Similarly, Soviet versions of the arm will generally have rear sights graduated in meters while early arms will be found to be sighted in paces.

Early versions of the arm include the original model 1891 rifle, a 52-inch arm with 31¼-inch barrel; the dragoon rifle of 1891, some three inches shorter in barrel and overall lengths; and the 1910 carbine, a 20-inch barrel arm used by machinegunners and artillerymen.

Other versions, such as the Models of 1894 and 1900 and the American-made (Remington) Model 1916, represent minor modifications of the original 1891 design. Earlier weapons used sling swivels attached to magazine box and upper band to attach the sling, but these swivels were subsequently abandoned in favor of slots through the stock to



Simonov 7.62 mm. rifle was Russia's first semiautomatic. Reportedly capable of fully automatic fire, the rifle is fed from a 15-round magazine



Tokarev model 1940 7.62 mm. semiautomatic rifle has shorter stock than 1938 model, metal handguard forward of stock, and six-vent muzzle brake

two-lug bolt action fed from a five-round in-line magazine. Unlike most bolt-actions, in which the two locking lugs at the bolt-head are vertically opposed when the bolt is locked, the Moisin's lugs are horizontally opposed when locked, engaging locking shoulders within the receiver ring. This system offers certain advantages: for example, it is not necessary to cut away part of a locking shoulder to provide a feed ramp.

The magazine is refilled either with single rounds or from a five-round charger, and inclusion of an auxiliary interrupter reduces the likelihood of rim-over-rim stoppages or of the cartridge rim interfering with operation of multi-piece bolt.

The earliest version of the 1891/30 bolt-action rifle was adopted by a special committee appointed in 1883. New powders were either available or projected for the immediate future, new bullet designs and calibers being considered, and the use of magazine weapons was obviously only a matter of time. At first, attention was paid largely to the matter of a new cartridge and breech mechanism, but soon the inquiry was broadened to take in magazine systems.

Final contenders in the competition were the rifles of Sergei Ivanovitch Moisin (or Mosin, or Mouzin) and of the Nagant firm in Belgium. The arm which was ultimately selected used the Moisin breech mechanism combined with the Nagant magazine and charger-loading system. Using a rimmed, bottle-necked cartridge, caliber 7.62 mm., it was

accept straps to hold the sling . . . precisely when this change was made is not known, but it is believed to have taken place around 1914.

In common with other countries, Russia, when first turning to a smallbore rifle, adopted a long, round-nosed bullet. The cartridge case was substantially the '7.62 Russian' case we know today, a rimmed, bottle-necked one, but the bullet was a 210-grain projectile fired at 2,034 feet a second. With the improvement of 1908 came a pointed bullet of modern form weighing about 150 grains and driven at about 2,800 feet a second. This basic load was increased to around 2,854 feet a second by World War II.

A 'heavy ball' load was developed, something along the general line of our M1 load, with a bullet weighing 182 grains driven at 2,670 feet a second. This was identifiable by its yellow painted bullet nose. There was also a target (and perhaps small-game) load with half-mantled 69-grain bullet. In addition, of course, there were a great many other loads including tracers; armour piercing, tracer; armour piercing, incendiary; armour piercing, tracer, incendiary; armour piercing; high explosive, incendiary.

The first post-revolutionary Moisin of distinctive design was the Model 1924/27 carbine. This arm was shortly followed by the Soviet Model 1891/30 rifle, a modernized arm patterned after the original dragoon rifle with 28.5-inch barrel. During World War II a special short carbine was

brought out, and it is reported that the latest issue arm is a carbine with a permanently attached folding bayonet.

In general, these arms have all the beautiful characteristics of the Moisin-Nagants, including a noisy bolt whose handle seems to extend at least several feet to the right; but wartime experience with special rifles, designed for use with scope sights, whose handles were necessarily bent down, seems to have given the Soviets the idea that a bent bolt handle need not be summarily rejected.

Accuracy of the Moisin arms seems to be a debatable point. If you listen to the reports of some of their more rabid—or better indoctrinated—partisans, you will think that you are hearing about a substitute for a custom bull gun, but less prejudiced observers seem to feel that the weapons give, in general, just about service accuracy and no more.

On this point, A. Engelhardt's notes on the Russian performance at the 1912 Stockholm Olympics may shed some light. Because the point of impact varied according to whether or not the bayonet was fitted, the Russian team fired its course with fixed bayonets—and came in last. Further, he mentions that the Russians purchased a number of heavy-barrel target rifles from GECO some time after 1920, which they obtained at a very good price, the firm hoping thereby to secure a re-order: the Russians were then found to be making the guns themselves!

Soviet experience and experiments early dictated the adoption of a self-loading infantry arm. In 1936 the Simonov was taken up as a service weapon. Its complicated action—it had, for example, a two-part bolt whose lower section was engaged by a locking member in the receiver which was locked by the upper section of the bolt and unlocked by a moving slide above the barrel!—and its vulnerability to dirt, combined with the fact that a complete field-strip was practically impossible, caused it to be replaced in 1938. The Simonov did have a highly efficient muzzle brake, and it introduced into Soviet service the above-the-barrel nozzle-and-cup gas system which later proved so successful in the Tokarev

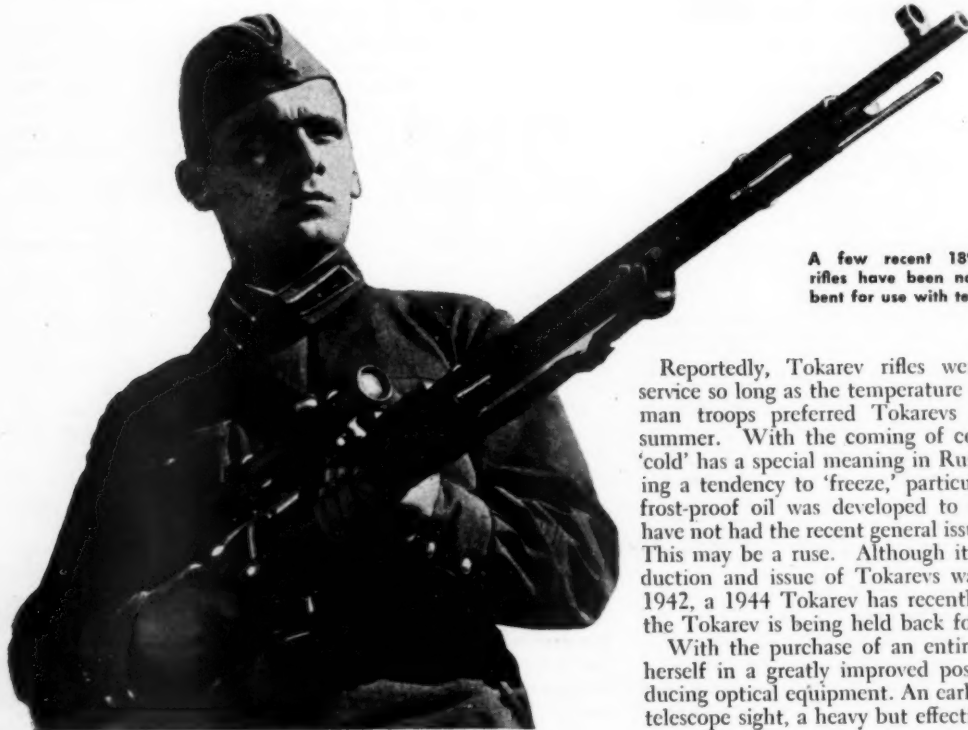
38s and 40s and in the German Gew 43/Kar 43 weapons.

With the adoption of the Tokarev 1938, an arm in whose design Simonov seems to have played a considerable part, the Russians secured an autoloading service weapon of superior design. Its tilting bolt, the rear end of which is cammed down into engagement with an internal locking shoulder by cams in the spring-loaded bolt cover plate, is remarkably simple and sturdy. When the arm is fired, gases tapped off through the gas nozzle drive back the gas cup and operating rod, forcing back the bolt cover, which lifts and retracts the bolt. A greatly simplified hammer and disconnecter mechanism provides semi-auto fire, while a second sear, actuated by the tail of the bolt as it locks, ensures against premature discharge—and can quite easily be used to give full-auto fire with only minor changes in the trigger mechanism.

Experience with the Tokarev 38s apparently made an improved cooling system seem desirable. Along with other stock changes dictated by the need of simplifying manufacture, additional pierced metal handguards were provided. The 1940's muzzle brake, having six narrow vent slots on each side, was replaced around 1942 with a muzzle brake having two large ports on each side. This probably reduced the muzzle blast effect somewhat, in addition to being easier to make.

A curious little carbine on the Tokarev system was reportedly produced around 1940. Unlike the Tokarev rifles, whose four-foot overall length includes a 28.5-inch barrel, the carbine was only 39 inches overall.

Bayonet development paralleled that of rifles. The original bayonets, slightly modified in design to fit the 1891 rifles, were temporarily supplanted by the special knife bayonet required for the Simonov, muzzle brake of which was not considered adequate to support a bayonet. It gave way to the long Tokarev knife bayonet of 1938, replaced in 1940 by the short Tokarev knife. With the return to 1891-arms, the old bayonet was again brought in. Latest reports describe a folding bayonet mounted on the gun itself: that the original bayonet was designed to be reversed on the gun should not be forgotten.



A few recent 1891/30 Moisin-Nagant rifles have been noted with bolt handle bent for use with telescope sight (Sovfoto)

Reportedly, Tokarev rifles were entirely satisfactory in service so long as the temperature stayed within reason. German troops preferred Tokarevs to their own Mausers in summer. With the coming of cold weather—and the word 'cold' has a special meaning in Russia—Tokarevs began showing a tendency to 'freeze,' particularly in the gas system. A frost-proof oil was developed to combat this, but Tokarevs have not had the recent general issue which might be expected. This may be a ruse. Although it was reliably held that production and issue of Tokarevs was practically eliminated in 1942, a 1944 Tokarev has recently appeared . . . so perhaps the Tokarev is being held back for a special purpose.

With the purchase of an entire Zeiss plant, Russia found herself in a greatly improved position in the matter of producing optical equipment. An early result was the 4 power PE telescope sight, a heavy but effective unit. Mounted either in

a two-part mount on the left side of the Moisin receiver or in a monobloc mount on the receiver ring, the PE (and a turned-down bolt handle) transformed the 1891/30 into a good sniping weapon. A later telescope, the 3.5 power PU, was mounted either in a one-piece left-side mount on the Moisin or in a unique single-unit mount on the Tokarev series.

Both the PE and PU scopes have been illustrated mounted on the TOZ (Tula) .22 rifles, bolt-action single shot (TOZ8) and box-magazine repeating (TOZ9) rifles. These are unremarkable training and sporting arms, some of which are fitted with sling swivels in spite of the apparent Russian idea that the sling may also be wrapped right around the barrel.

As one curious note, the Russians in World War I imported and issued quantities of the old Winchester 1895 box-magazine lever-action rifle in 7.62 mm. caliber fitted with

the gun were developed on this basic system, among them the DA (aircraft gun) and the DT (tank). Extensive use of the arm demonstrated that the recoil spring, carried in a tube below the barrel around the piston rod, overheated and weakened during prolonged firing, and so a modernized version of the gun was introduced having its recoil spring in a tube at the rear of the receiver. Both the DP and the DT were thus modernized, becoming the DPM and the DTM. Oddly, unmodified DP guns and modified DTM guns have been found in Korea, many of the DTMs being used as ground-service machine rifles—some fitted with a scope and mount.

The Smith and Wesson Russian Model (variously described in European sources of the period as Model 1875 and Model 1878), .44 Russian caliber, was the first 'modern' handgun adopted by the Russians, although a Galand revolver is be-



Designer of several semiautomatic rifles and pistols, F. V. Tokarev, at age of 70, as he received the Gold Star 'Sickle and Hammer' and title of 'Hero of Socialist Labor' from M. Kalinin in November 1940 (Sovfoto)



Designer of PPSH 1941, George Shpagin is reportedly chief designer of infantry weapons (Sovfoto)



Among arms invented by late V. A. Degtyarov was one of the best light machine guns ever built (Sovfoto)

military stock and a charger-guide over the magazine. That some of these were stored away is indicated by the report that one has turned up in Korea. The Russians also got considerable quantities of weapons in 7.92 mm. German service and in .303 British, especially Pattern 14s, before and during World War II.

The burden of rifle-caliber automatic fire in the Russian squad falls on the famous Degtyarov machine-rifles, the DP and DPM guns. Their inventor had a unique career: born in 1880, working at Tula in 1891, an enlisted man at Oranienbaum witnessing tests of foreign machine guns, back at Tula with Fyodorov developing the loadings for the 1908 improved cartridge—V. A. Degtyarov stands on a par with Maxim and Browning in the development of automatic weapons.

After the Soviet government was relatively firmly established, one of its first thoughts was to modernize its weapons. Earlier experiences with the Madsen machine-rifle had demonstrated the desirability of a weapon of this class. Early in 1924, Degtyarov undertook development of an automatic weapon, and late in that same year his brain-child was tested against the Maxim-Tokarev and the Maxim-Kolsenikov. The Degtyarov suffered breakages, and the Maxim-Tokarev was tentatively adopted for field tests.

When these tests disclosed that it would be necessary to redesign the Maxim-Tokarev action, which eliminated to a large extent its ability to use standard Maxim parts, a retest was ordered. Redesign of the Degtyarov had greatly improved it, and in new tests it easily outclassed the Maxim-Tokarev.

The basic action of the Degtyarov (locking flaps carried in the bolt whose rear ends are forced out to engage shoulders in the receiver) was adaptable, and several other versions of

lied to have had some limited issue in the Russian Navy.

It was displaced by the Nagant adopted in 1895. Used in both single-action and double-action versions, this arm was designed around a peculiar cartridge whose bullet was entirely enclosed in its case. At the moment of firing, a movable breech-piece jammed the cartridge and cylinder forward so that a recess in the front of the chamber enveloped the rear end of the barrel as the cartridge mouth slipped into the barrel, thus providing a gas-tight joint. This arm had a solid frame without provision for simultaneous ejection, cartridges being loaded individually through a gate and being forced out by an ejector rod. The Nagant revolver's peculiar cartridge with the projectile fully enveloped in the case was not color-coded, but it is distinctive enough without any coding. The bullet weighs 105 grains and is nominally driven at around 900 feet a second (although H. P. White Co. reports a velocity of about 950 feet a second). Early tests indicated a velocity of 1,082 feet a second fired in the Nagant revolver—and 725 feet a second fired in a similar revolver lacking the Nagant's gas-check design.

Peiper of Belgium had produced in 1889 a somewhat similar obturating revolver with a crane and swing-out cylinder, but, curiously, the Peiper revolvers sometimes found in Russian service lacked both swing-out cylinders and obturating mechanism, although they resemble the Nagant closely.

The importation, reportedly by revolutionaries preparing for the 1905 uprising, into Russia of quantities of the Schwarzlose 1898 automatic pistols, 7.63 mm. Mauser caliber, gave the Empire its first good taste of what autopistols could do. Largely stopped at the border under stringent restrictions on the importation of firearms—the (Continued on page 46)



Merritt A. Edson

Marine General Merritt Edson Named NRA Executive Director

ONE OF THE Marine Corps' outstanding heroes of World War II has just been named to succeed C. B. Lister as Executive Director of the National Rifle Association. Major General Merritt A. Edson, whose record spans both a military career climaxed by the award of the Congressional Medal of Honor and long-time devotion to virtually every phase of the shooting game, was named to the Association's top administrative post on June 15, 1951. On that date, Edson handed his resignation as Commissioner of Public Safety to the Governor of his native state of Vermont and resigned as NRA President.

In taking over as the head of the NRA on July 1, General Edson will guide the activities of over 500,000 American civilian marksmen organized into more than 8,000 affiliated clubs from coast to coast. Also under his guidance will be the Basic Small Arms Training Schools now operating throughout the country and the junior program which each year teaches thousands of youngsters to handle guns safely. He will oversee the American target shooting game.

Edson was born in Rutland, Vermont, on April 25, 1897, and attended the University of Vermont. During the summer of 1916 he served on the Mexican Border with the Vermont Infantry (National Guard) and, at the outset of World War I, enlisted in the United States Marine Corps. He was commissioned a second lieutenant in the regular service on October 9, 1917.

Between the wars, Edson served at Quantico, Virginia, as a flyer at the Naval Station on Guam, at sea aboard the USS Denver and Rochester, and as commanding officer of Marine patrols in Nicaragua, for which he was awarded his first Navy Cross. From September 1929 to 1931, he served as an instructor at the Marine Corps Basic School in Philadelphia. In the late 'thirties, Edson served in Shanghai, where he picked up much of the knowledge of the Orient which he used so successfully during World War II.

In June of 1939 Edson was assigned to Headquarters, Marine Corps, as officer in charge of all target practice. Throughout his service career, Edson had been closely associated with shooting. From 1931 to 1934 he was Ordnance Officer at The Marine Corps Depot of Supplies, Philadelphia, in charge of all ordnance procurement for the Corps. He was a firing member of Marine Corps teams (1921), assistant team coach (1927, '30, '31), Marine Corps team coach (1932), and team captain (1933). Upon resumption of the National Matches in 1935, he captained the Marine Corps national rifle and pistol teams of 1935 and '36 which carried off top national honors for both years.

General Edson's service during World War II is well known. In the first American offensive of World War II, Edson commanded both the First Marine Raider Battalion and the Second Battalion, Fifth Marines, in the landing on Tulagi, in the Solomon Islands, on the morning of August 7,

1942. General Edson's forces captured the island after two days of fighting. In early September 1942 he commanded the raid on Tasimboko, on Guadalcanal, and in September he conducted the defense of Henderson Airfield. One action followed another: Guadalcanal; Tarawa; Saipan; Tinian. As a result of recommendations incident to his conduct during the battle of Tarawa, he was promoted to brigadier general late in 1943. On December 16, 1945, Edson was ordered to Washington, D. C., having completed almost forty-four months of continuous duty in the Pacific theater, the longest continuous overseas assignment of any Marine Corps officer during the war. In 1947 Edson retired with the rank of major general, and accepted the executive and administrative post of Vermont's first Commissioner of Public Safety.

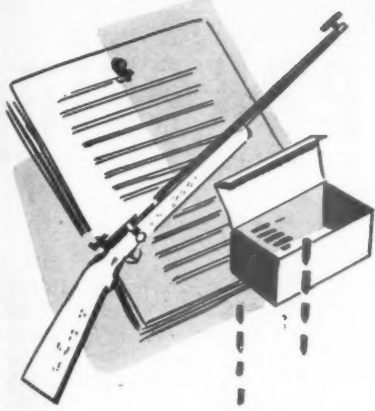
In 1948 Edson was elected vice-president of the National Rifle Association and in the following year, president. His selection as executive director of the NRA by the Association's Board of Directors came as the climax of an extensive search to fill the vacancy created by the tragic death of C. B. Lister (RIFLEMAN, June, page 10). Edson comes to the NRA with a lifelong acquaintance with shooting behind him, and a keen appreciation of the problems facing the NRA as a result of today's tensions and uncertainties. Edson has been a Life Member of the NRA since August 22, 1933, and a member of the Board of Directors and the Executive Committee since September 1939. ♦♦♦

Firearms

LEGISLATION

.....
A REVIEW OF RESTRICTIVE BILLS PROPOSED IN 1951

By Frank Daniel



FOR THE PAST several issues of the RIFLEMAN you have seen on this page a brief listing of some of the many different bills introduced in state legislatures to control firearms. Perhaps your state was not represented, although the chances are that it was. On the other hand, perhaps you are one of the National Rifle Association members who has received by mail this year as many as four special bulletins warning you to look closely at a bill that was before the legislative body in your state, on its way to becoming the law.

In either event, you may reasonably have asked, "Why this flurry of excitement all of a sudden? Why am I being bombarded all at once with these suggested gun bills?"

The answer is that, since the first weeks of the year 1951, you have been seeing the regular democratic processes of America in action, seeing them at close hand as they relate to a field of interest very dear to gun-owning sportsmen.

Constitutional provisions in forty-five of the forty-eight states call for a regular session of the state legislature to be held once every two years, during the odd-numbered year. Special sessions of state legislatures, to consider particular legislation, are frequently called at other times, but, generally, the opening months of each odd-numbered year are the months when the state capitol is in the public eye. This year, forty-three of the state legislatures met in regular session during January, and two others met later.

In each session of any state legislature, hundreds of bills are introduced for every one that stands the test of debate and becomes law. Bills are introduced at the insistence of numerous pressure groups, some so extreme in their provisions that no thinking person gives them a chance of being passed. It is the job of hardworking, conscientious legislators to sift this mountain of proposed legislation and separate the worthwhile from the foolish and inconsequential.

It is here that NRA members have an opportunity and an obligation to be of service to all sportsmen.

The average state legislator is a public servant in the truest sense of the word. In most cases he is paid, of course, but only for the days that the legislature is in session. It is probable that legislators lose more in time away from their business than they gain through their services to the state. During each regular session, in committees and public hearings, the legislators tackle a monumental legislative job, the most important one in our American democracy because the daily life of an individual is governed by state statute.

The state legislators try to pass the best possible laws for their state, the kind their constituents want. Imagine, then, how much it means to them, when a firearms law comes up, to have the reaction and advice of an experienced shooter.

It was to help keep the individual sportsman informed of

the firearms bills before the state legislature in his state that NRA Legislative Bulletins were mailed to 225,000 members during the past six months.

Of the 240 firearms bills proposed in state legislatures this year, each was studied in detail by the NRA in light of existing law. Many of the bills were found to be worthwhile attempts to modernize and make uniform some phase of state law; some were inconsequential from the standpoint of the sportsman and target shooter; others had in them the seed of real danger in that they would have, for one reason or another, placed arbitrary controls on the ownership or proper use of firearms by law-abiding citizens. The National Rifle Association reported by legislative bulletin to members in twenty-three states fifty bills which would have, if passed, placed arbitrary control over firearms ownership.

Broadly speaking, all of the proposed firearms legislation can be classified in one of four general categories.

Fifty-nine bills were proposed amendments or additions to the criminal code of the state. These proposals might loosely be characterized as 'police legislation,' although not all of the bills were introduced at the request of the police nor did they all have the support of the police departments.

Eighty-nine firearms control measures were introduced as amendments or additions to state game codes. Some of the worst of these were introduced at the request of sportsmen themselves in well-meant attempts to legislate against that lowest of all thieves—the game thief.

Thirty-eight bills can be characterized as attempts by various civic organizations to legislate against firearms in the supposed interest of public safety. In this category, for example, were found all of the proposed legislation to correct the occasional misuse of air guns by prohibiting the sale and, in some instances, the manufacture of air guns.

The remaining firearms bills, fifty-four in number, were proposed changes in state law which would have affected firearms only incidentally. They included such measures as state civil defense bills which, in some cases, sought to place emergency controls over the possession and use of private weapons. Also included were amendments to state fire codes, vehicle codes, and regulation of explosive substances, all of which required careful study by the NRA for their possible effect on the ownership and transportation of firearms and reloading components.

Some general trends in firearms legislation that may be crucial in future years may be seen. Many NRA members will be shocked to realize that of all bills dealing with firearms, eighty-nine proposals, the largest number in any one category, were conservation bills, game-law amendments that had nothing whatever to do with (Continued on page 32)

Photographs by Robert D. Emmons

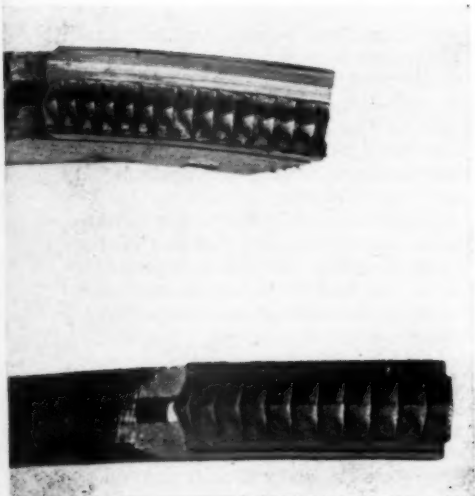
Checkering



1 Here are basic tools used by a professional stockmaker: V-tool, spacer, brush, knife, scribe, pencil, and flexible straight edge



2 Cutting edge of spacer (below) and V-tool (at bottom)



3 Adjustable cradle allows stock to be turned and moved into any position, permitting the worker to take advantage of convenient and comfortable working positions. A much simpler device is a 2x4, with suitable uprights for supporting the stock, which can be clamped in a vise

MANY'S THE MAN who has tried his hand at stockmaking. Though the results, good or bad, are screwed to 'Old Betsy' and displayed with great pride, the finished product usually lacks that useful and decorative detail checkering.

Any man with the ability to make a stock should have the ability to checker it. Probably a lack of understanding of a few basic principles concerning layout and tooling keeps many from trying. It is my intention to try to clarify some of the major points here. D. J. 'Monty' Kennedy, formerly with the Pfeifer Rifle Company, and now associated with the Custom Gunsmith Service in Sun Valley, California, supplied the necessary material and know-how, and the methods shown are those that Mr. Kennedy has found best.

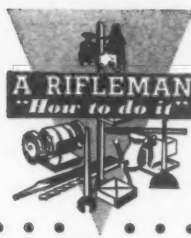
Basically, checkering tools consist of a spacer and a V-tool, their names implying their use. Once the master lines are located, and either scribed or cut, the spacer is used to space off equidistant lines, and the V-tool is used to deepen these lines to sufficient depth to bring the diamonds to a point on top. Again, correct spacing is largely a personal matter, but a spacing of 20 lines per inch is considered to be the best for all-around use by many stockers. Spacing finer than 20 lines per inch becomes increasingly difficult, and the diamonds chip and break very easily. Coarser or wider spacing may be slightly easier to do, but results are less pleasing and less professional-looking. In no case should anything less than 16 lines per inch be used.

Tools may be hand made, or there are several on the market that can be purchased for a nominal sum. Whether you make your own tools or buy them ready made, the included angle of the V-tools is important and should be considered. Mr. Kennedy's tools have an included angle of 90 degrees, which when brought to a point (good checkering should come to a point with no flat showing on top) gives a diamond whose base is wider than its depth. An angle of 60 degrees will give an equilateral diamond. An angle of 45 degrees, while unsatisfactory for use in checkering, would give a diamond whose base would be narrower than its depth. The disadvantages of anything approaching the excessiveness of 45 degrees can readily be seen: extreme depth is required in bringing the diamond to a point, and with its narrow base the diamond will chip and break readily.

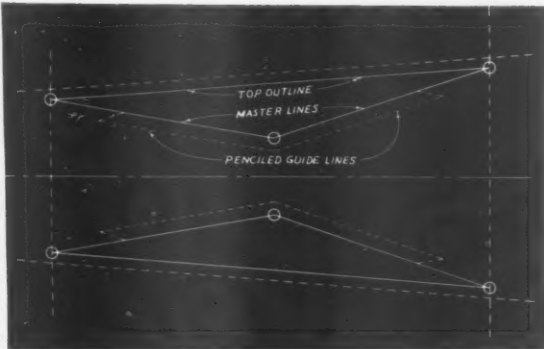
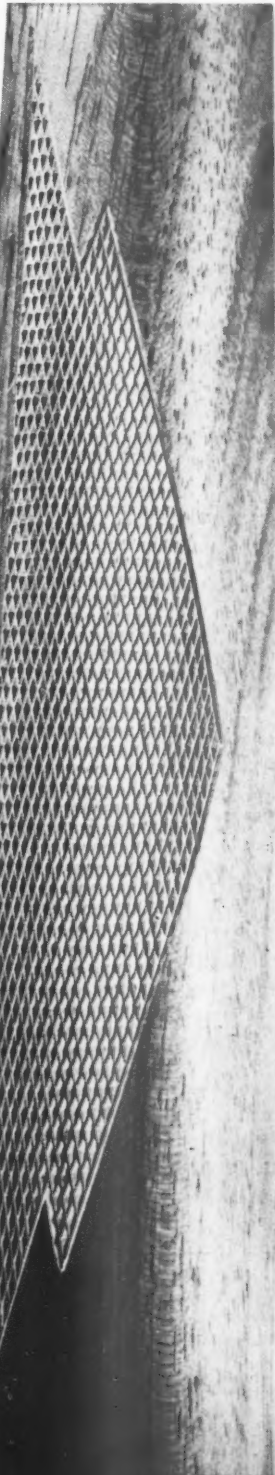
In addition to the two basic tools of spacer and V-tool, the only other things you will need are a scribe, knife, pencil, brush, flexible straight edge for laying out straight master and border lines on curved surfaces, and possibly several layout diamonds, although these are not necessary.



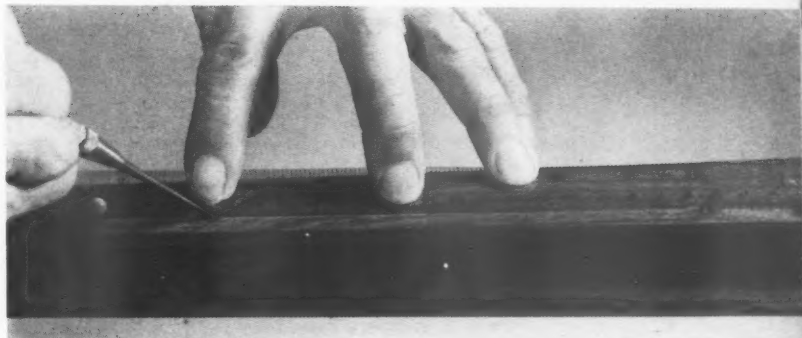
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4 Here is the forearm pattern which will be followed in this article. Circled points indicate those to be definitely spotted; all others are to be merely indicated with a soft pencil. It is strongly recommended that the pattern be first drawn, accurately and full size, on paper even though you do not intend using paper to transfer pattern to stock. Though you may intend making the layout directly on the stock, a full-size accurate drawing will eliminate what might turn out to be costly errors



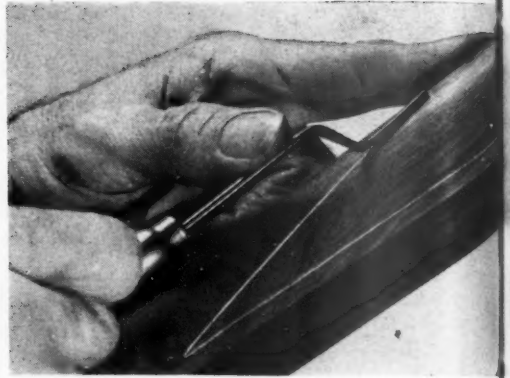
5 Once the pattern has been decided upon, the length determined, and the stock supported by some device, pins can be inserted at circled points to act as a guide for the straight edge. Cut or scribe top outline sufficiently to enable it to be followed with the V-tool. A space of from $\frac{1}{8}$ inch to $\frac{3}{16}$ inch from top line of forearm to top line of forearm pattern is suggested, as in illustration at left

6 With half diamond of proper proportions, or a straight edge, lay in master lines with scriber or knife. Pins can again be used as a guide. Master lines in the pattern serve also as outlines for checkering from the main point to the secondary point

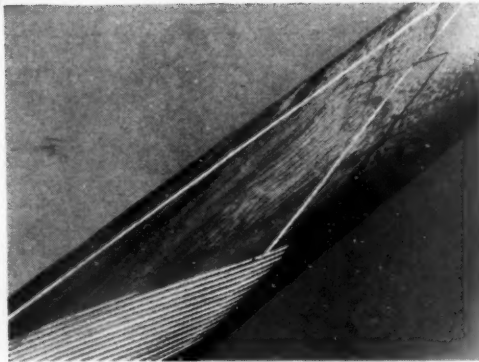




7 Extend master lines with straight edge until they join in a point. The diamond shown is one that has been found to be of a convenient size for all-around use. However, it should be pointed out that size is of little importance, proportion or degree of angle being all-important

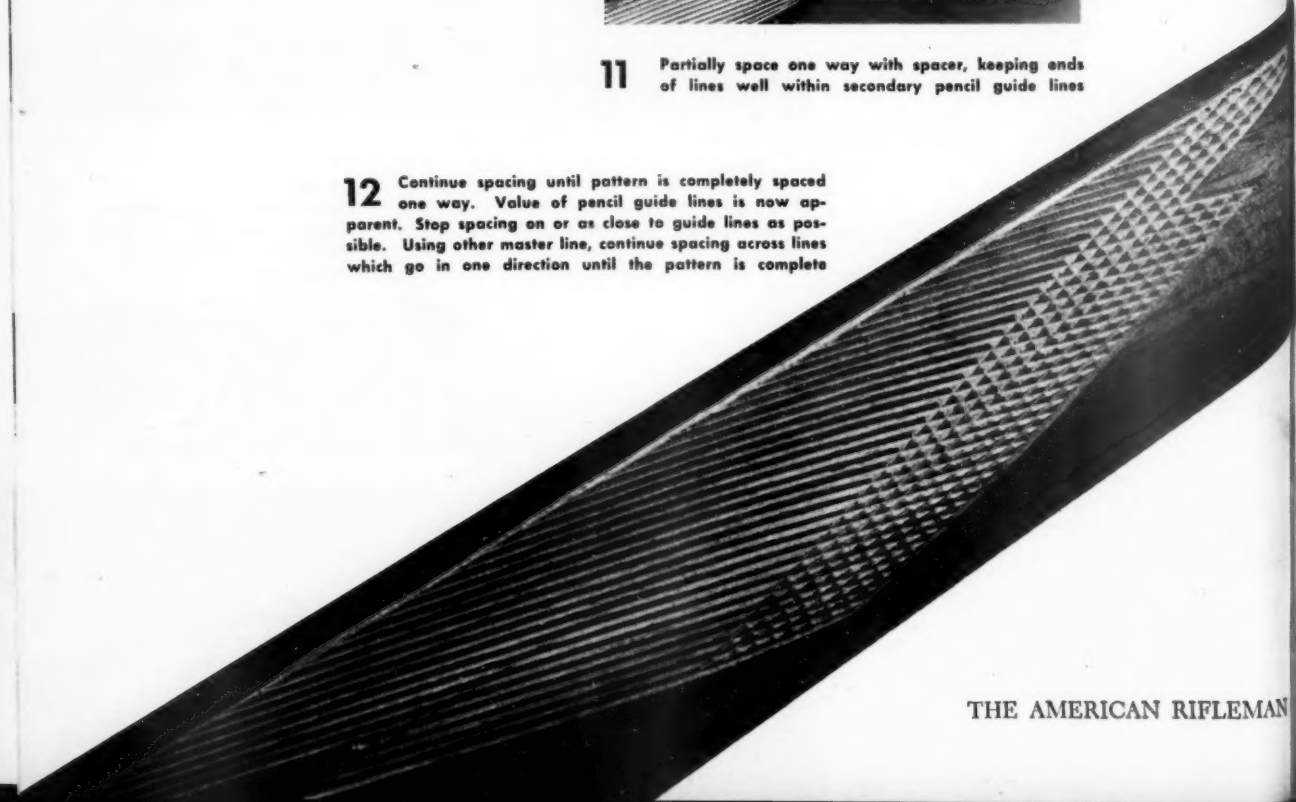


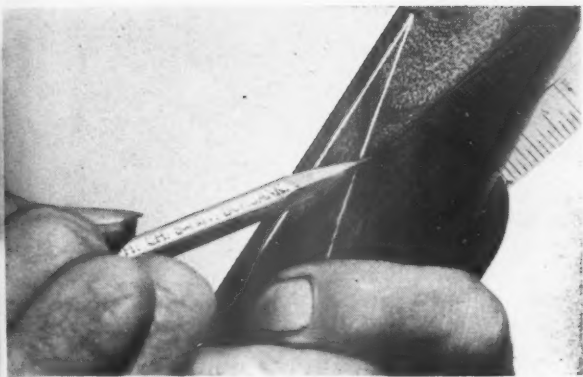
8 Cut top outline and master line with V-tool using a light, short, back and forth motion. Do not cut too deep. All that is required is a depth sufficient to be followed by spacing tool. The long tool pictured here is advantageous in keeping the lines absolutely straight



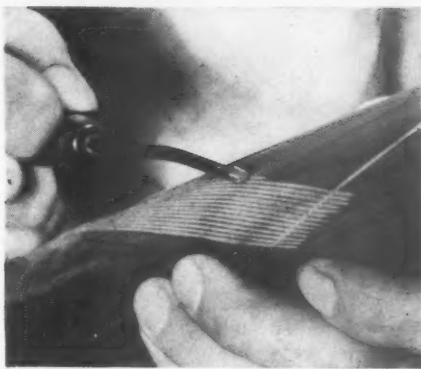
11 Partially space one way with spacer, keeping ends of lines well within secondary pencil guide lines

12 Continue spacing until pattern is completely spaced one way. Value of pencil guide lines is now apparent. Stop spacing on or as close to guide lines as possible. Using other master line, continue spacing across lines which go in one direction until the pattern is complete





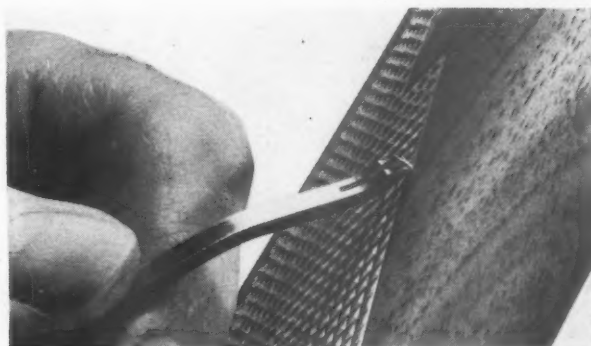
9 Locate points of secondary lines with straight edge and soft pencil. Pencil guide lines are important as they enable you to work up to them with spacer and stop at proper place. There are no rules to follow in locating these secondary points but pencil guide lines should be kept parallel to corresponding master lines



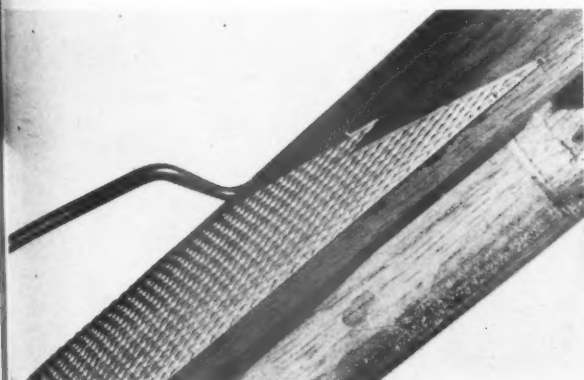
10 Starting with either master line, begin spacing, keeping well within pencil guide lines. Use short, easy strokes with spacer as with V tool used to cut master lines



13 After pattern is completely spaced, V tool is used to deepen grooves. The bulk of the wood is removed with a coarse tool, if available, and a finer tool and lighter strokes are used as you approach the final depth. Diamonds should be brought to a point and cleanly finished. Checkering emphasizes grain and figure rather than hides it



14 Extreme care should be exercised in approaching outlines as any slips that go past are there to stay. It is recommended that you pull the tool away from the outline rather than push toward it. The tool shown in this illustration has a removable cutter which has been reversed so that it will cut with a pulling as well as a pushing stroke



15 Deepen outlines to final depth. This will remove the very slight nicks which you will undoubtedly find present. The long tool shown here is advantageous if available, but not at all necessary as the V-tool will do the job satisfactorily



16 Carefully touch up points and any other areas requiring attention with light, easy cuts, and you will find that you have quite a respectable-looking checkered forearm. Tool in photo is a version of V-tool



17 Since paper patterns are of little or no value in laying out pistol grip, due to the compound curves encountered, the lines are laid out with flexible straight edge and pencil. Very seldom is the checkering on a grip carried completely around the under side. Dimension for break is largely preference but $\frac{3}{4}$ inch to 1 inch looks well



20 Long curved top line of grip pattern is pencilled in with aid of french curve or other suitable templet



18 Bottom line of grip pattern is laid out with flexible straight edge. Spacing from edge should coincide with forearm spacing from upper edge of stock to pattern



21 If you should desire a grip pattern where the checkering goes completely over top of grip it is necessary that master lines be extended to center of grip

19 The sharp curved line aft of grip is pencilled in using templet with suitable radius. Line around cheek piece should be kept parallel with line of cheek piece

22 After the half diamond has been used as shown above, the flexible straight edge is used to extend master line of grip pattern down to the desired terminus

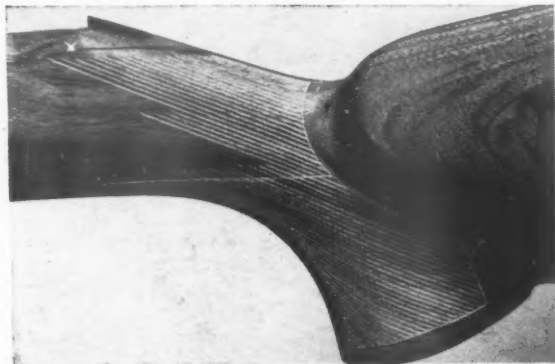




23 A half diamond is used to cut or scribe master lines, which in this case are independent of all other outlines. The proportions of the diamond should, of course, correspond to one on the forearm

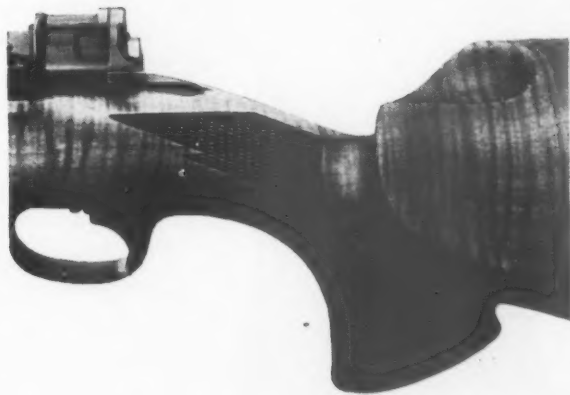
24 Veiner is very useful for cutting the short curved line aft of grip. Curve of corresponding line on right side of stock, or on left side where no cheek piece is used, is much more pronounced

25 Other outlines of grip pattern are cut with V-tool or veiner, whichever is more adaptable for job



26 After master lines are laid out, secondary points may be added and positioned as desired but the overall pattern should be kept in harmony with the forearm. This shows the complete pattern spaced one way and the pencil guide lines in use to locate secondary points as on the forearm

27 This shows the pattern completely spaced one way and partially spaced the other way. After pattern is completely spaced, continue with the same procedure as in completing the forearm



Shooting the .45 pistol and .30 carbine is included in every Marine's training



Forty-five percent of the time spent in training a Marine to shoot is devoted to instruction with and firing of the M1 rifle



A Marine recruit receives one week of instruction in sighting drills, position exercises, and weapons operations before he fires a shot. Then he shoots a Reising .22 rifle of same weight and balance as the M1



By Paul Cardinal

THIRTY-EIGHT PERCENT OF A MARINE RECRUIT'S TRAINING IS SPENT IN LEARNING TO SHOOT SMALL ARMS AND TO HIT WHAT HE AIMS AT

THE AMERICAN RIFLEMAN

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MARKSMANSHIP in the United States Marine Corps is of the highest quality. The life of a Marine revolves around the M1 rifle from the moment he enters 'boot' camp for basic training until the day he leaves the service. In the course of his military service a Marine may become a radio-man, a tanker, an artilleryist, a quartermaster, or a specialist in one of several fields, but primarily he remains a rifleman—and a good one at that.

There is no argument among officers in the Marine Corps about the value of aimed fire in combat. The ability of a man to hit what he aims at is a prized asset to the Corps which is cultivated with a great deal of care.

The Corps has two boot camps for basic training, one at Parris Island, South Carolina, and the other at San Diego, California. Any man who enlists in the Corps passes his first eight weeks in the service at one or the other. Parris Island, the larger camp, gets roughly 60 percent of recruits.

During the eight weeks a Marine recruit is in boot camp he gets no leave and can hardly call a moment his own. It is during that period that the mold is cast to make him one of the finest fighting men in the world. In all, a Marine recruit gets 391½ hours of training. Of the training time, 148 hours—roughly 38 percent—is devoted to weapons training. Contrast that with the 60 hours of training which the Army gives its rookies in thirteen weeks.

A man entering the Marine Corps spends his first three weeks in boot camp learning various military subjects, which range from history of the USMC to combat squad problems. In the 165½ training hours he receives but ten hours on arms and equipment.

A recruit's marksmanship training starts in the fourth week when the Weapons Battalion takes over and trains him for the next three weeks. During that period the boot is fed nothing but marksmanship from early morning until late at night. Of the 173½ hours of training time during this period, 147 hours are devoted to weapons training. Over 95 percent of the total weapons training time is spent with the M1 rifle.

The Marine Corps uses the platoon system in training. When a boot arrives in training camp, he is assigned immediately to a platoon of 74 men. For the next eight weeks everything the boot does he does with his platoon. He gets his haircuts with the platoon. He goes to the Post Exchange with his platoon. He associates with no one outside of his platoon, and everything he does he does on schedule. The reason is to endow the boot with pride in his unit and to teach him discipline. It is the birth of the Marine Corps' famous 'esprit de corps'.

There is no doubt that the system works. While at Parris Island I watched the platoons then being trained by the Weapons Battalion. The rivalry of small units in competition with each other to qualify the most men with the M1 rifle, to have the best kept area and equipment, and to be the best marching outfit, was intense, and because of it you could see excellent infantrymen born before your eyes.

The boot spends eighteen training days with instructors from the Weapons Battalion. His working day during the period starts at 4:30 A.M., and he is kept going until 6 P.M. Marine weapons instructors assume that a recruit is ignorant of any phase of marksmanship. Keeping that assumption in mind at all times, the instructors turn out in eighteen days an excellently qualified rifleman—a man who knows his weapon thoroughly and can handle it with complete confidence under any condition. Above all, what he aims at he can hit.

The recruit does not draw a rifle until his fourth day of weapons training. In the first three days, by lecture and demonstration, he receives general instruction in marksmanship, range procedures, safety precautions, sighting and aiming exercises, triangulation, position exercises and demonstrations,

stoppages, windage rules, and all the other details that go into the making of an expert rifleman. On the fourth day of training he finally draws his M1, and the practical work begins. He reviews everything he has learned, this time with the rifle. On the sixth day of training, after having been thoroughly schooled with the M1, he is introduced to the .45 caliber pistol and the carbine. With these two weapons he goes through the same intense training. The time is shorter but he has learned already the fundamentals of marksmanship.

On the seventh day of weapons training the boot finally fires the .22 caliber rifle. He fires one hundred rounds in all positions at 50 feet. On the same day he shoots 45 rounds with the .45 caliber pistol. On the eighth day it's 150 more rounds with the .22 rifle and 50 rounds with the carbine. Finally, on his ninth day of training, the Marine recruit fires the M1 rifle. In the next nine days he fires a total of 350 rounds with the M1, which takes him from familiarization marksmanship to shooting for qualification.

The U.S. Marines take the time necessary to teach a man to shoot, and they have a capable corps of instructors to make



Each Marine small arms coach is an experienced rifleman especially trained to teach recruits the fundamentals of good marksmanship

it work. There is no halfway measure about the system. The officers and men of the Weapons Battalion are charged with only one duty—to teach a man to shoot.

The chief range officer, and the man who is most responsible for teaching marksmanship at Parris Island, is Chief Warrant Officer R. E. De La Hunt, a Marine veteran of 22 years service. His main interest in life is to turn out the best-trained body of rifle marksmen in the world. De La Hunt, a Camp Perry veteran and a member of the National Rifle Association, is the champion with the M1 rifle in the Marine Corps and would like nothing better than to give a man the ability to whip him at the game. De La Hunt's assistants are men of the same caliber and same experience.

The Marine Corps builds up and maintains a special staff of weapons instructors. The key officer rifle instructors at Parris Island are all veterans of at least seven years experience. Their sole function is to teach men to shoot. Their entire working day is spent on the range supervising the enlisted men instructors and stepping in to give extra know-how if a man is having difficulty.

Enlisted instructors are qualified men who have been taught to do one job well. When a Marine is selected as a weapons instructor, he is sent to a Coaches School. He is trained in all the fine points of teaching someone else to handle a rifle as well as he can. After graduating from the school, he is assigned as an assistant to another coach for at least six months. He is closely observed and, if he does not prove himself in that time, he is transferred to another station or given another job. If accepted as a coach, his tour of duty as a rifle instructor is three years.

The competition in boot training is carried on not only within the recruit platoons but among the instructors themselves. When the platoon goes on the firing line, a school



Every Marine recruit is trained primarily as a rifleman. Afterwards he may become a specialist, but he remains a rifleman

coach will be responsible for from five to eight men. The coach has the responsibility of qualifying the men under his influence. A coach gets to know the men he is working with and handles them accordingly. He works with the same pupils during the entire three weeks they are under the supervision of the Weapons Battalion.

A record is kept of each coach's work, the number of men he has worked with and the number he has qualified in record firing. From the records, it can be seen that many coaches have qualified 100 percent of the men they have instructed. The lowest percentage is 70, or seven out of every ten men the coach supervises on the line. A coach who qualifies that low a percentage is watched carefully. Mr. De La Hunt feels that he might be going stale, that he might be losing interest in his job. The Weapons Battalion will not tolerate any lackadaisical attitude in a coach's work, and if he gives any indication whatsoever that he has lost interest, out he goes. On the other hand, if a coach is superior, he receives extra benefits and privileges. Coaches naturally try to outdo each other, and the recruits get the benefit of the extra effort.

Everything is done to give a Marine proper recognition for accomplishment. Weapons qualification in the Marine Corps is still recognized by medals and bars. Even the two boot camps, Parris Island and San Diego, vie for honors. Each year the two camps try to qualify the highest scoring man, for which the General Matthews Trophy is awarded.

I visited several Marine ranges on which boots were training. The range technique is perfect. There is a professionalism in the operations that is almost unbelievable, even for a military outfit. Not a moment is wasted. When a man is not on the firing line, he is trigger squeezing or practicing position. You watch the firing and are surprised at the proficiency of the recruits. A red flag signifying a miss is a

rarity. If one does show, the man gets attention immediately.

I asked the range officers if I could talk to some of the recruits who had been in the other services and were now learning to be Marines. I talked to several. The first was Patrick Ducey, of Queens, New York. He had served in the Infantry for two years from 1947 to 1949. Ducey told me that he had qualified as an expert in the Infantry but that he had learned more about the M1 rifle in the three weeks in the Corps than he had ever known before. I asked him how many rounds he had fired in two years in the Infantry. He didn't know, but he was positive that he had fired more rounds in three weeks at Parris Island.

Another boot, Belmar Hall, from Wheelright, Kentucky, had been in the Army for two years and eight months. True, he had been a medic, but in that time he only fired ten rounds with the M1 after he had gotten overseas. Now that he was a Marine, he might still become a specialist, but first he was being taught to be a rifleman.

Another recruit had been in the National Guard for two years and had not handled a rifle once. A former three-year Air Force man had never fired a rifle and had fired a machine gun only once. So it went down the line. I did not find one man who would admit that his training in another service had been as complete or as comprehensive as his Marine training.

The commanding officer of the Weapons Battalion at Parris Island is Colonel George H. Hayes, a Pacific combat veteran who has been in the Marine Corps for 18 years. I talked to him about the argument that Army officers are having about the value of aimed fire in combat. He came back with one answer: "Good marksmanship is necessary for combat fighting. There is no substitute for it."

Other Marine officers felt the same way. They want men who can hit the target at which they aim. Their feelings have penetrated all through the Marine Corps.

As a reporter for the AMERICAN RIFLEMAN, I asked several Marine officers what they thought of the NRA Basic Marksmanship School program. They admitted the schools were a good idea but, as far as they were concerned, they would prefer to receive boots for basic training with no prior knowledge of rifle marksmanship. They felt that an untrained man can be molded to the Marine way much easier than one with some training.

The Marine officers had several reasons for their thoughts. First, they claimed they would have no way of knowing whether a man had had previous training. All boots go through the same training and no questions are asked about previous experience. Second, a man with some knowledge might disrupt the platoon by debating the Marine way with the things he had been taught elsewhere. They felt that it might be harmful to morale to have a 'know-it' guy around.

I appreciate the feelings of Marine officers on NRA basic training, but I cannot agree with them. A properly instructed man is always of more value, regardless of the source of his knowledge, than an uninstructed one. It seems wasteful not to take advantage of extra know-how.

From boot camp a recruit Marine goes to either Camp Lejeune or Camp Pendleton. It is at one of these bases that he receives advanced training. He might become a tanker, a signalman, a baker, a mortar man, a machine-gunner, an artilleryist, or any one of the other specialists that a modern fighting force needs to sustain combat. However, the Marine will always be a fine rifleman. Not only is he thoroughly trained with the rifle in the first few weeks that he is in the Corps, but each year he has to requalify with his basic weapon. That is true of all Marines. Such is not the case in the other military branches. That is why the Marine is the best-equipped military rifleman in the service of our country. ● ● ●

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JULY, NINETEEN FIFTY-ONE



Hunting Small Game

WHEN THE TARGET IS FLEETING, THE DAY CALM AND GENTLE, AND SHOTS DIFFICULT, ANY CARTRIDGE AND RIFLE WILL SERVE THE SMALL-GAME HUNTER

By Henry M. Stebbins
PART 1

SO YOU GOT 'EM with a rifle?' is a remark that betrays the wide-eyed admiration of those who know just a little about hunting when they see us return from a trip with bullet-bagged small game. But their approval is not needed. The sharpened marksmanship and the mature appreciation of the outdoors are rewards enough. Skill achieved in the rifle hunting of small game and varmints has a significant likeness to that of the efficient infantryman, sniper, or guerilla. It begets a sound self-confidence.

Experience shakes down each one of us to rather definite opinions about proper equipment and hunting methods for our part of country. Yet, unless we follow the main principles in the selection and use of a weapon, it is easy to go wrong in hunting.

Before choosing a rifle for hunting small game in the woods, we do well to select first the cartridge. It must have the accuracy and just the right power for squirrels, rabbits, an occasional grouse that we outwit, and yet do for moderate range shooting at such varmints as crows, hawks, and even foxes. The .22 long rifle, highly advertised for such work, has a spotty record. Expert riflemen and hunters use it for the difficult head shot on squirrel, first finding the most accurate solid-point bullet for their particular rifle, then doing the final sighting-in under woods conditions. Such men are few. For most of us the hollow-point is better, though its accuracy, in any factory lot, or fired from any rifle, is seldom as fine, and its greater destructive power is variable. If we use the hollow-point, we test accuracy and mushrooming qualities before we hunt, learning its effective range—and our own. Clean kills on squirrels at fifty yards take a lot of doing!

Other rimfire cartridges serve the small-game hunter. The .22 WRF, made only in solid-point at 1,450 feet a second velocity, closely approaches the clean-killing old .22 WCF, and is more accurate; some rifles, even slide actions, grouping in an inch at fifty yards. Usually less accurate but more deadly are the .25 Stevens and .32 long, which are about equal in destructive power—and rarely excessive. If these cartridges group in $\frac{3}{4}$ inch or less at only 25 yards, we need pass up few shots at woods squirrels—provided we're hunters.



Lever and bolt actions are most popular small-game rifles, lever action usually being handy and well balanced and bolt action accurate. Illustrated are Savage 99 and Remington 722

The Hornet, Bee, 222, and other .22's up to the Varminter and Swift can be handloaded with blunt, soft lead bullets at about 1,500 feet a second to give accuracy beyond that of most rimfire ammo above the long rifle. Likewise, a good .25 caliber, from .25-20 to Roberts or up, can be made into a fine small-game gun if loaded to .25 Stevens formula—65 grains of blunt, soft lead at 1,130 feet a second. The .30's, 8 mm's, and even larger cartridges can be squirrelized with round bullets at about 1,000 feet a second. The .32-20 and .32-40 seem made to order for careful handloading with bulk shotgun powder, grease wads, and cast lead or sharply inspected buckshot. If we can work up a load for the center-fires that groups soft-point bullets on varmints at about 100 yards, with no sight readjustment, we are ready for both the woods and pastures between. Often it's possible.

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No cartridge can be recommended for specific ranges, since so much depends on the hunter's skill in hitting, from the positions he assumes, those small spots which will result in a fatality. Too, so much depends on the rifle and sighting equipment. The Hornet or Bee can do excellent work on chucks or smaller varmints at 100 yards, at 150 if skill and calm weather favor the bullet. The 2-R Lovell, 222, and Zipper are better, built to order for 50- to 55-grain bullets.

At medium ranges, from 200 to 300 yards, the usual if's being considered, the Swift, .250, Roberts, and a milk can half full of wildcat loads have their innings—safe, non-ricocheting. These more powerful cartridges may prove annoying to many who let us use their land as proving grounds for skill and ballistics. Often they give accuracy so superb that we shoot even better than we thought we could. Recoil is trifling, and lots of us are impervious to muzzle blast that snatches us bare-headed.

Over 300 yards is a long shot at any varmint. But for those long ranges a few fellows justifiably use a .270, old Master of Arts .30-'06, .300 Maggie, or wildcats. Where the wind sweeps western ranges, and distances almost equal a tyro's estimate, bullet length and weight—good old sectional density—have the authority. Sometimes they're essential. Yet barrels bored with special slow twists for short bullets are popular, and lately the exact opposite is being tried, and not for heavy game only.

The next choice may be the action. There is a wide selection in a woods rifle—bolt, single shot, lever, pump, and semiautomatic. The bolt and single shot are slow, yet the most accurate. The lever and the pump are much faster, a doubtful value under most conditions, but often finely balanced, and they are stocked and equipped with sights for snaphooting accurately at running game. Only a few of us are fitted by temperament—and experience!—to use the self-loader effectively. For the few it's exactly right; for others it's a handicap and even dangerous. When I call the roll of the fellows I've known to be consistently able to pin a running rabbit with a rifle, I summon just three. Two of them used light bolt-action .22's, one a slide-action .22 WRF, and rarely did they fire more than twice, or as much. From long use their guns and sights had become a part of them.

The supremacy of the bolt action for long range varmint shooting is undisputed except by single-shot enthusiasts, who are deadly with custom jobs like the old .25 Niedner Krag or .277 Elliott Express, a child of .405 brass. In parts of the west coyotes still run in small packs, still are a nuisance, and few hunters care to use a single shot then. Nothing rides more comfortably in a saddle scabbard than a short, flat lever action, effective up to perhaps 150 yards. In the east some of us have only, or elect to use, a lever, pump, or semiautomatic center-fire, doing plenty of experimental loading to discover the accuracy potential. Arms of .30-30 type frequently shoot closest with standard weight bullets at original velocities of 2,000 feet a second or so. Even take-down lever actions often can be made to group well up to about 75 yards by dismounting them only when necessary and being exact

in the placement and grip of our hands; too, most of them can be altered to solid frame. Selected solid-frame Savage 99 .250's and Winchester 65 Bees are outstanding among lever guns that can whip a so-so bolt action.

Balance of a rifle means a good deal, if we learn to handle it; it depends on weight distribution. For deliberate, super-accurate work no weight we can carry up and down the hills is too much, though it can be in the wrong place. If the rifle teeters at a balance point from 7 to 9 inches ahead of the trigger and weighs from 9 to 12 pounds, it should hang well for small-game sniping. For snaphooting we'd like to shift the balance point to 7½ or possibly 6 inches and get rid of about three pounds, on the average. Amateur gunsmithing can adjust the hang and fit of most rifles, hollowing or weighting stock or forearm, slimming or building up, adding or reducing stock length and the highly important pitch of the buttplate—shortening the length to toe, for instance, if we try for running game with reasonable calmness and still overshoot.

Most of us find that a long, slim barrel balances better for both quick and deliberate firing than a short, chunky one of equal weight. And a breech-heavy rifle with massive action is no precious boon to the snaphooter—unless he has one and is determined to defend it! Try as I will, I can remember no occasion when a long barrel proved a handicap in my brush shooting, though once I was nicely fouled up with a 20-inch tube.

The woodwork of the pet precision rifle is of aldermanic build. The forearm is long enough for a sling and probably beaver-tailed, though that shape can be a nuisance in woods carrying. The comb is high, full enough to let the face—round, hatchet, or middlin'—rest confidently on it. The fat, close-up pistol grip feels good in prone and not bad offhand, though for snaphooting it's awkward. For such work many of us like a straight grip, as on a shotgun. If our rifle is a lever-action repeater, the loop into which our fingers go serves the purpose of a pistol grip by letting us pull the stock into our shoulder to steady it.

Stock length, as ideal on the sniping and the snaphooting rifle, need vary hardly a quarter inch between the two types. But to fit individual shooters lengths may vary over an inch, say from 12¾ to 14 inches. A few rangy men do their best with 14-inch stocks, or even longer. Short-armed, heavy-chested fellows are badly handicapped by factory standards or 13¼ or 13½ inches. A stock must feel right, whatever type of shooting we use it for, comfortable in slow fire or responsive when seconds count. Though we can learn to shoot with any, why add to our difficulties?

The target weight trigger pull of three pounds and a wheat-straw over is a good compromise for the hunting rifle. It is not too light for cold, numb fingers, though a calm, experienced shot can do beautiful work on bitter days with a two-pound pull. Above four pounds a pull is a handicap; it can be mastered, but the aspiring rifleman has worlds enough to conquer. These figures are general, with much depending on temperament, a factor that will not let some of us benefit from a set trigger. Those familiar with the 'hair' trigger practically demand one on a squirrel or varmint rifle. No one chooses the double-stage military pull for snaphooting, the takeup of which must be second nature if shots are not to fly high and wide of a speeding target.

The ideal woods rifle isn't the best for varmint shooting, though the varmint rifle, unless it's too heavy, particularly at the muzzle, does well in the brush, even for snaphooting.

There are fairly economical new rifles to think about, the light Savage 342 Hornet and Winchester 43 and the heavier Remington 722-222. With the majority, but by no means all, of our varmint shooting at long ranges, with fair time in which to get off the shot, most enthusiasts stick close to the

target type in details of weight, stock design, and trigger pull.

Good hunters are particular, or they'd never have become good. Many oldtimers who roam the woods consider an exposed hammer almost a must—it's so handy to cock as the rifle flies to the shoulder for a quick shot, so noiseless to raise, holding back the trigger and easing the two into engagement when wary game is sighted. Trigger guard safeties are left off frequently and shouldn't be; it's hard to learn the sure, subconscious finding of one. Tang and side safeties are easily learned, the former probably as fast as the mule-eared hammer. Nothing beats a side safety when a suitably low mounted hunting scope is used.

Scope powers rise to 8, 10 and beyond, just as the sniper's ambition or ability rises. Others rationalize, saying that the 2½, 3, or 4 power glass which serves well in the deer forests lets them see clearly any varmint as far as they can be certain of placing a vital hit on him. It's all debatable, sometimes amusingly so. Those who must use iron sights or choose them for their ruggedness like a small apertured rear and a black post or even a large apertured, hooded front, the latter only in good light.

A bright, wide-field scope of 2¼ to 4 power will amaze and delight the woodsman who has never used one. Even an inexpensive glass of such magnification is lengths ahead of iron sights, if only it is reasonably clear, mounted low so that its small field gives a sight-line easy to place on the mark, and blessed with adjustments exact enough to let us zero it in precisely. Favored reticules are medium crosshairs, with or without a floating dot, and the wide, flat-topped post.

For running game more of us could use a scope than think we can. A 2½-power glass of modern type, even a cheap one, has a pretty fair field. Yet in this business iron sights come into their own. Snug to the barrel, strong, little affected by any weather if a careful man keeps his eye on them, they do nicely for snapshooting and the keenest eyes aim nearly as well with them in deliberate fire as with a scope—if there is good light on the target. For the woods those with experience usually select a gold, red, or ivory bead or post front, and a large-aperture peep rear on the tang of the stock or as far back on the receiver as action design permits. They don't pick the gold because it's easiest to see in forest shadows; it isn't, but you can smoke it for use in the sun and find it still there when you go back to the woods! Don't forget that blackening a bead and sighting-in generally call for added elevation when we wipe it bright again.

No varmint or small game ordnance macadamizes the way to success. Old, experienced shooters must learn to use a new piece, and usually they are the most particular of all in mastering it. Since our national wildlife is too precious to be wasted by sloppy shooting that results in a high percentage of lost

cripples, it is no longer smart to 'learn on the game.' We must get the basics in rifle practice, in which nothing but coaching by some genuinely interested old hand equals the rifle club. All winter long we can peg away with the .22, then fire it—or with luck the big-bore—outdoors when we're ready to learn about wind, mirage, and extended ranges. We can learn to shoot well in prone without becoming addicted to it, then take our skill into sitting, kneeling, and squatting positions for all can be useful in the field, depending on slope of ground and height of the natural screens between us and the game. Useful too can be the resting of wrist or body against a tree, rock, or fence.

Sitting has value for all of us—it is even possible to swing on moving game from it—and the woods hunter obviously must master offhand, the Army position rather than the NRA, ideal though the latter is for one deliberate shot at a still target, the wind being mighty still, too. In club shooting we'd like to use our hunting rifle, as we can if it's a .22 rim-fire, and some galleries permit the use of squib loads in the center-fires, light conical or round bullets and 2 or 3 grains of pistol powder, accurate at 50 feet when well assembled. Though practice with any rifle is better than none at all, sometimes we find a smallbore similar in weight and balance to our high-power arm, a Winchester 75 not greatly different in hang from a 70 Swift or Roberts, a Remington 513 rather like a custom .270 with medium barrel, and so on.

Graduating to field practice, always either safe from ranging bullets and ricochets, or in wilderness where they are of no consequence, we do well to begin with timed single shots from offhand, cutting down gun mounting, sighting, and trigger squeeze, with accuracy always paramount. We progress to timed magazine fire, still regarding hits above 'volume of fire'. Shooting at aerial targets teaches us rifle handling and quick sighting, though it can be too tempting a diversion in itself! A keg bouncing downhill teaches us snapshooting and lead. Where such work is unsafe we can often use neutral-colored series targets, lined up like Olympic pistol silhouettes or stretching straight out or diagonally from us. Thus we simulate running or charging game, there being much of the small boy in most of us riflecranks. But it's useful field work.

Just as essential as the study of the trajectory of our rifle and load is the process of range estimation over various terrain, the pacing of distances almost anywhere, even in streets and parks, knowing what percentage to knock off for our shorter than yard long steps. We must eternally remember that as a rule only one good shot is allowed in hunting. After we have developed by such practice a mastery of the rifle that may well amaze us we are ready for the game fields, but not before. (To be concluded) ♦ ♦ ♦



Other rifles popular with the small-game hunter are the Winchester model 65 (above), custom remodeled Sharps-Borchardt single-shot (center), and Winchester model 70 bolt action





Another Civil War Revolver?

By H. B. GARDEN

IF THE Navy-type percussion revolver shown above—which was found hanging on the wall of a country store in a small town in the deep South, where from all reports it had been hanging for many years—is not a rarity, at least it is unknown to a number of dealers and collectors from whom information has been solicited.

The store proprietor stated the gun was used in the Civil War, and that he obtained it from the original owner. As there was no evident reason, commercial or otherwise, for this bit of history to have been imagined, it is possible that the piece was one of a small sample lot issued to Federal troops for trial, or sold to the Confederate government through foreign agents, as was the case with many other arms.

In any event, since, so far, no information has been found on the piece, it seems in order to provide a detailed description of it. The revolver has an overall length of 13½ inches. It is of .36 caliber rifled with six grooves to the right. Barrel length is 8½ inches overall, tapering from ¾ inch at the frame to ⅝ inch at the muzzle. It has a small bead front sight and a rear sight notch grooved in upper edge of frame. Barrel is threaded ⅞ inch at breech, and further secured to frame with a small pin. The frame is solid, with grip section integral with frame. There is a capping groove in recoil shield. Cylinder is six shot, of light construction, with no engraving. The slots that admit the locking lug are badly

worn, from use or from poor hardening of the metal. Between each nipple is a slot for half cock safety. Clearance between the cylinder and the barrel is very little. Two-piece walnut grips are held in place by pins and a single screw. The trigger guard is brass, held to frame by a lug in the rear and a single screw in front. The trigger guard is the only brass piece on the gun. Hammer is outwardly graceful but generally plain. The loading lever and cylinder shaft are combined, and the assembly secured to the frame by a single tapered pin. Only marking on the gun is "Western Arms Company, New York" on the barrel. Found on practically all other parts is the number "16", except on the front of the frame at the edge of the brass trigger guard is the number "716". No traces of original finish are visible. Weight of the revolver is two pounds and eight ounces.

The general appearance of the revolver gives the impression that it was a copy of the Whitney. This is further borne out by the similarity between the interior moving parts and the Whitney mechanism. If it should be discovered that the Western Arms Company started manufacturing a Whitney-type revolver, and was restrained for one reason or another, some light would be thrown on the origin of the gun. At any rate, the Western Arms piece is not a common one, and should provide a new and interesting subject for the inquisitive element of the collecting fraternity. ♦ ♦ ♦

NEXT MONTH in the "Rifleman" . . . anticipating the firing of the Wimbledon Match for the first time in twelve years, Elmer Keith, a star performer in big-bore competition at National Matches during the 'twenties, discusses rifles and loads for 1,000-yard accuracy . . . an examination by Major B. R. Lewis of the single-shot rifle invented by Dr. Edward Maynard which was popular during the late 1800s . . . a report on the Sparrows Point (Maryland) Police Force, which sponsors annually an outstanding pistol tournament and conducts year-round a valuable junior training program . . . and another in "Rifleman" series on North American big-game animals, the big-horn sheep.

AMERICAN Multishot CARTRIDGE PISTOLS

By Hershel C. Logan



YEARS BETWEEN the late 1850's and the early 70's saw more activity in the production of arms than any identical span of time of American history—not in quantity, of course, but in the variety of types invented. It was an era which saw Yankee ingenuity in the development of arms at its best. The heyday was occasioned largely by two important events, around which the whole story of cartridge arms in this country revolves.

The first was the development of a rim-fire metallic cartridge by Smith & Wesson. The development stemmed from the patent (No. 11,496) of Aug. 8, 1854 held by Horace Smith and Daniel P. Wesson, even though the patent was for a center-fire cartridge, but on April 17, 1860 these two pioneers in metallic ammunition secured a patent (No. 27,933) on their perfected rim-fire cartridge.

The second, and no less important, was the purchase of the Rollin White patent (12,649) of April 3, 1855 by the same Horace Smith and Daniel P. Wesson. White's patent provided for 'chambers right through the cylinder.' Possession of the patent gave Smith & Wesson the green light for the production of America's first metallic cartridge revolvers (see "America's First Cartridge Revolver", *RIFLEMAN*, June 1948). It also involved Smith & Wesson in much legal action to protect their patent rights (see "Early Cartridge Arms", *RIFLEMAN*, January 1949), which were infringed or evaded by many manufacturers.

It is necessary, however, to keep in mind that the perfecting of a rimfire metallic cartridge, and of a breechloading arm to use that same ammunition, supply the background for any discussion of early American cartridge pistols. The two events are as much a part of our arms history as the wool and warp are to the weaving of a fine tapestry.

Single-shot pistols were fine for target shooting and to carry in one's pocket for protection, but their usefulness was terribly limited should the need suddenly arise for more than one quick shot.

Multishot arms were not unknown or uncommon then. They were to be found in every stage of arms development up to that time. If arms manufacturers were to make guns to compete against the little 'seven shooter' being produced by Smith & Wesson, it was necessary that they utilize their ingenuity to the fullest to cash in on the use of the then-new metallic ammunition, and yet not become involved in legal action with Rollin White or Smith & Wesson. The interesting part is the manner in which the principle of multishot was

adapted to the use of the new rimfire metallic cartridges.

It is the writer's firm conviction that the class of arms discussed here are simply what the heading implies—multishot pistols. Many of them are erroneously referred to by dealers and collectors alike as derringers and pepperboxes. It will be recalled that derringers derive their name from Henry Deringer of Philadelphia, who popularized the small, compact, large caliber, single-shot percussion pistols that bear his name. Cartridge pepperboxes took their name from a class of arms with a revolving cylinder containing several chambers. To refer to these multishot arms, then, as derringers or pepperboxes is simply not to be realistic to the fact of their origin. They are neither one shot, nor do they have revolving barrels.

Basically these multishots, or repeaters as they were sometimes called, followed the loading methods used by single-shot arms of that day. Barrels tipping down, tipping up, sliding forward, and barrels revolving to one side, all were used to good advantage. Barrels may be over and under, side by side, or in group units.

Referred to on occasions as 'many barreled firearms', these multishots were all of the pocket type, that is to say they were designed for pocket or handbag use as a protecting agent. It is an error to suppose that they were carried or used altogether by the lawless or criminal. For the most part they were used by reputable citizens. Men and women alike felt adequately armed with one of these small and compact multishot pistols. On some specimens the owner's name will be found engraved on the backstrap, evidence of its being a gift or that the owner prized it enough to have his or her name engraved thereon.

Calibers followed very closely to the single-shots, and multishot pistols will be found in .22, .25, .30, .32, .41, and .44. Only two specimens of the Remington over-and-under pistol in .44 caliber have been found.

Earliest of the multishots is the small .22 caliber four-barrel Sharps which was produced by Christian Sharps of Sharps' rifle fame. It was patented on January 25, 1859. Pulling backward on the hammer, and at the same time pressing downward on the button on the left side of the frame, allows the four-barrel unit to be slid forward for loading. Detonation of the cartridges is achieved by a revolving firing pin on the face of the hammer. While the arm was patented in 1859, it is believed that Sharps took the idea from a patent on a four-barreled percussion repeating pistol

which he had taken out some ten years earlier. The Sharps pistols* were produced in .22 and .30 calibers and are the most common of the multishot group.

Along in 1863 or '64 Christian Sharps went into partnership with William Hankins of Philadelphia. From this association came two interesting .32 caliber pistols, the Sharps & Hankins and the Sharps 'Bull Dog' pistol or 'Sharps 4 shooter' as it was called in advertisements of the time. The early Sharps & Hankins differed from the Sharps in that the revolving firing pin was placed in the frame instead of on the hammer. The chambers were recessed for the rim of the cartridge, and a thin blade was set in vertically which extracted the empty cartridge when the barrel was slid forward. Apparently the firing pin in the frame did not prove too satisfactory as many of these arms with higher serial numbers will be found with the original Sharps method of having the firing pin on the face of the hammer.

Other makes in the four-barrel group are the Starr, Rupertus, Perry & Goddard, Remington, Shattuck, and Mossberg. Of these, the Starr is perhaps the oldest. A side-hammer pistol, the Starr had a button-type trigger which never fails to draw interest. It was patented (42,698) on May 10, 1864 by Eben T. Starr of New York. The Starr Arms Company had plants in New York, Yonkers, Binghamton, and Morrisania, New York, which were in operation for only around nine years, beginning in 1858. The barrel group tips down for loading. Calibers were .32 and .41.

The Rupertus and the Perry & Goddard resemble quite closely the Sharps four-barrel. Both are rather scarce items today and are to be found in only a few collections.

First patented (28,461) by Wm. H. Elliott on May 29, 1860, the Remington four-shot in .32 caliber presents a most unusual appearance. A small catch in front of the novel ring trigger is pulled forward to allow the barrel group to be

* For those who are interested in the Sharps pistol story in detail, Robert E. Ernst had done a remarkably fine piece of work in issue No. 26 of *The Gun Collector*, which is quite complete and goes into much more detail than is possible here.

tipped down for loading. Pushing the ring trigger forward and then pulling it back into place revolves and trips the inside hammer to fire the piece.

A slightly smaller version of the ring-trigger Remington was made in .22 caliber, the main difference from the four-shot, square-type barrel group of the .32 caliber being in the number of shots (five) and the round fluted barrel group.

Most unusual of the four-shots is the Shattuck "Unique", manufactured by the C. S. Shattuck Arms Co. of Hatsfield, Mass. The four chambers are bored in a solid block, which is hinged at the breech and tips down to load. Two calibers, .22 and .25, seem to be the only ones in which this oddity was produced. A moveable part of the frame rotates the inside firing pin and fires the gun when squeezed. The piece was patented on Dec. 4, 1906, making it quite modern when compared with others of the multishot family. It is of interest to note that Cornelius Vanderbilt, Jr. secured a patent for a similar piece on March 21, 1916.

Most recent of the four-shots is the "Brownie" produced by O. F. Mossberg & Sons of New Haven, Connecticut. Designed to resemble an automatic, it employs a rotating firing pin and has four .22 caliber barrels drilled in one solid block. A catch on the top releases from the rear to permit tipping the barrel down for loading.

So far as is known, the Marston is the only multishot pistol produced in three-shot form. Its three barrels are in a vertical line. A flat catch on top turns to the right to permit the barrel group to tip down for loading. A dial indicator on the right side of the arm shows which barrel is being fired. The small T-shaped plate in front of the dial serves as an extractor when the barrels are tipped downward. The Marston was first patented on May 26, 1857 and later improved in 1864. The first model, in .22 caliber, had a three-inch dagger blade on the left side of the barrels. The blade was slid forward and locked in place by means of a spring. Calibers for these three-shot pistols were .22 and .32.

Turning now to the two-shot arms, we find the names of four prominent arms manufacturers—F. Wesson, Rupertus,

- 1) Remington 5-shot .22
- 2) Sharps 4-shot .22
- 3) Sharps & Hankins 4-shot .32
- 4) Starr 4-shot .32
- 5) Remington 4-shot .32
- 6) Sharps 'Bull Dog' 4-shot .32
- 7) Shattuck 'Unique' 4-shot .22
- 8) Mossberg 'Brownie' 4-shot .22
- 9) Marston 3-shot .32
- 10) Remington 2-shot .41
- 11) American Arms (Wheeler's Pat.) .41
- 12) F. Wesson 2-shot .22



American Arms, and Remington. Scarcest of the group is the Rupertus .22 caliber double-barrel arm. Its two barrels, side by side, revolve to the left to load. The single hammer has a movable firing pin which can be moved, by means of a knob, to fire either barrel. Rupertus Pat'd Pistol Mfg. Company was active in Philadelphia from around 1860 to 1888.

An early arms maker was Frank Wesson, who produced over-and-under multishots in .22, .32, and .41 calibers. He was active in Worcester, Massachusetts from around 1850 to 1877. The over-and-under pistol in the illustration was patented (84,976) on December 15, 1868. A few of these arms were equipped with small daggers, which were concealed in the center tubular chamber between the two barrels. In advertising of the day, the pistol was listed as "Double Shot Pocket Pistol with Extension Dirk Knife". To revolve the barrels for loading or extracting cartridges, it is only necessary to push up on the small catch in front of the spur trigger and turn the barrels by hand.

An innovation was offered in the multishot manufactured by the American Arms Company of Boston, Mass. Known as "Wheeler's Over-and-Under" by collectors, it was made in a combination of .22 and .32 calibers, one barrel in .22 caliber and the other in .32 caliber. On October 1, 1865, Henry F. Wheeler secured a patent for the revolving principle used in the arm. The barrel, after the catch in front of the trigger is pushed rearward, is revolved to either side and can then be drawn forward on a base pin to extract the shells. A flange around the base pin catches the rim of the cartridge to withdraw it as the barrels are moved forward. In early

advertising these arms were called "Wheeler's Patent Breech-Loading, Repeating Pistols."

One of the most popular of the double-barrels is the .41 caliber Remington over-and-under, which was produced under Elliott's patent of December 12, 1865. These vest-pocket arms were manufactured until around 1935 by Remington. Even though an estimated 150,000 were produced, the arm is becoming increasingly hard to find. During World War II it was eagerly sought by G. I.'s in the Air Force going overseas as an auxiliary arm. A special holster to fit around the wrist was available from holster manufacturing companies for use with this potent double-shot weapon. An earlier model was provided with an outside two-arm extractor, which withdrew the empty cartridge cases when the barrel was tipped up.

Two Remington over-and-under pistols in .44 caliber have turned up. One is similar to the regular type. The other is much larger and has several unusual features. First is its greater length, 9½ inches, as compared to the 5 inches for the .41 caliber. The grips are of a rounded birdshead type with a ring in the butt. A trigger guard and regular trigger replaces the usual spur trigger found on the .41's. This big Remington takes the .44 Henry rimfire cartridge. Two other unusual specimens of the Remington have been reported in this study, both of them in .22 caliber instead of .41.

To the Remington goes the honor of being the one produced for the longest length of time, and being the one that brought the era of multishots down to within our memory. With the cessation of their manufacture the final curtain was rung down on a type of American arm that came into popularity nearly a century ago. Truly, the multishots were a product of American ingenuity in its prime. ● ● ●

ANTIFIREARMS LEGISLATION

(Continued from page 15)

'police controls' over firearms. These were 'sportsmen's bills,' intended to improve the sportsmen's enjoyment of the woods and fields. Of the eighty-nine bills, sixteen were so unduly restrictive of possession and use of firearms that they were reported to the membership by mail in special legislative bulletins so that opposition to them could be expressed to the legislatures. It has become evident that many sportsmen will support a restrictive firearms bill introduced in the name of conservation though the same type of bill, introduced in the name of criminal law-enforcement, will bring howls of protest. For example, the attempt by several state legislatures to control 'jacklighting' more effectively, by making possession of a firearm with any sort of artificial light in woods or fields after dark presumptive evidence of the unlawful jacklighting of game, has received the support of many sportsmen who optimistically believe that the law will be enforced only against undesirable characters. If tragedy for gun-owning sportsmen is to be avoided, sportsmen must keep constantly in mind that the whole American system of jurisprudence hinges upon government by law and not government at the discretion of the individual enforcing the law.

Twenty bills reported by NRA legislative bulletin attempted to control criminal use of firearms by imposing additional controls on possession or use of firearms by law-abiding citizens. Typical of these was the bill introduced in the Federal Congress to amend the firearms law of the District of Columbia to require photographing, fingerprinting, and a police permit in order to purchase a pistol or revolver in the District. A bill introduced in Pennsylvania, if passed, would have required registration of all firearms, including rifles and shotguns, and a ballistics test by state police of each weapon at time of registration. Four states introduced the so-called

"Uniform Pistol Act" that would require a 'target shooter's license' and prohibit use of any target pistol with a barrel length of less than six inches. So much opposition to all of these bills was expressed by sportsmen and NRA members that not one has been favorably considered.

Bills designed to correct the occasional misuse of firearms in residential areas by banning completely certain types of guns, principally air rifles, or denying all firearms to persons under eighteen years of age, appeared in alarmingly increased numbers this year. Twelve such bills reported to members by NRA legislative bulletin were defeated or sensibly amended. It is obvious to shooters that education of the general public concerning junior shooting and the opportunities afforded by it for completely safe and healthy recreation is needed. NRA members must bring the lesson home to the public through their own clubs and local communities that safety with firearms is the result of proper training and supervision, and that it cannot be obtained through prohibitory legislation. Abundant proof of the success of training is evident in the twenty-five-year-old NRA junior program which now qualifies in rifle marksmanship over 150,000 youngsters annually in a program which is completely accident free. Extension of the NRA safety and marksmanship training program to air rifles for youngsters below eleven years of age is the NRA's answer to the air-gun problem.

Out of the many battles fought and won has come the comforting knowledge that NRA members and sportsmen everywhere are aware of the danger of restrictive firearm legislation. Far more important is the realization that NRA members are ready and able to work effectively in opposing anti-gun bills when the call to action comes. ● ● ●



CONSIDER the minnow. He is a small fish and any angler will tell you that there is little sport in him. Yet the minnow has a far wider distribution than any other species of domestic fish. He is found from coast to coast and border to border. His number is legion. He is definitely a part of the great American scene. He has been proved indignant to our waters wherever sought and long has been accepted as commonplace. That is, until recently. Now scientific research has brought to light astounding new facts regarding the minnow.

It will be recalled that when the late, great Theodore Roosevelt discovered the tree-climbing fish of South America there were those who regarded this report with skepticism. Indeed, some even went so far as to utter certain ribald and dissonant noises peculiar to the Bronx at the first mention of such a species. Time, of course, soon refuted them and they lived to regret these utterances—or should have done so.

Accordingly, in the light of past experience, it is to be expected that a like amount of cynicism will greet the announcement of the discovery of an astoundingly unusual new species of minnow with even more inconceivably peculiar characteristics than Colonel Roosevelt's tree-climbing fish.

This new species, save for very brief and irregularly spaced periods of time in the water, lives entirely on the land. While it has the same general distribution possessed by its aquatic relatives, unlike them it is highly selective of its habitat. It is to be found only on terrain used as a rifle, shotgun, or pistol range. In winter and periods of inclement weather it ensconces itself in gun club quarters, provided there is a

sufficient degree of comfort to meet with its demands and critical standards.

Scientific circles extend to the discoverer of a new species the honor of giving it a name. At first, the author, when faced with such a grave responsibility, was inclined to name the new species in honor of some of his friends or many acquaintances. However, in deference to the great number of gun clubs throughout the land where the species is to be found, he decided to give it a general rather than a specific name. He has dubbed it MINO, a contraction of the descriptive phrase "Member In Name Only."

The MINO may be readily recognized through his peculiar and typical habits. He is never to be found in the vicinity of any activity which concerns the betterment of the club or the shooting game in particular. But at club shoots and social events he is to be found in great schools, arriving after all preparations are completed and the events under way and leaving well before the work of stowing impedimenta and making things ship-shape begins.

At these times the MINO is extremely vocal and considers himself to be gifted with a hypercritical judgment, especially pertaining to the labors of fellow-members on target installations, firing points, landscaping of the club property, and any and all improvements.

However, when given the opportunity to place his suggestions into effect through personal effort, the MINO promptly reverts to his usual solitary state and loses all gregariousness. Somewhat in the manner of a cuttlefish retiring under cover of a smokecloud of inky substance it ejects, the MINO belabors the issue with a verbal barrage of "pressing business engagements; sick

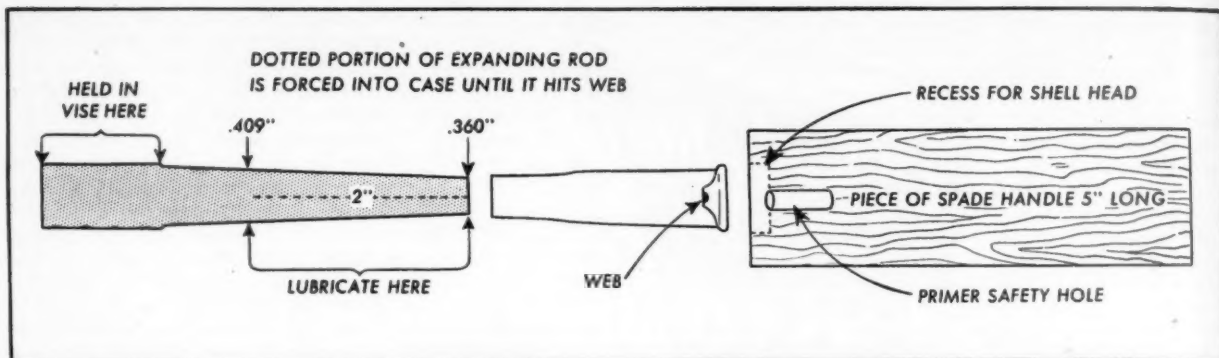
wife; heart condition; not a spare moment right now; as much as I'd like to."

A study of the MINO's nervous reactions shows that he is particularly susceptible to utterances of politicians which may restrict his constitutional right to possess and bear arms if enacted into law. Such utterances, when brought to his attention, drive him into a frenzy. His body becomes violently agitated. His coloration deepens. He emits constant loud bellows and vociferously states his precious rights. He challenges all and sundry to dispute his claim of being bitterly wronged. This highly agitated state may last for a considerable period of time but usually subsides as soon as the MINO is without an audience. Nor does it have any after-effects upon the MINO. In no case does it drive him to aid his national organization and club by immediately letting his representative know his feelings in the matter.

Numerous other sources which cause intense agitation to the MINO have been noted. Delays in posting the results of shoots or the issue of bulletins, the quality and quantity of food at club socials, the size and quality of birds at turkey shoots, the lack of tight-grouping targets, lack of material comforts, even the weather. All of these items have been the cause of agitation to the MINO and resulted in his denunciation of the committee concerned with the item. However, regardless of his degree of agitation, no instance has been noted where the MINO sought to take corrective measures through his own efforts. It may, therefore, be stated that such dissonant outbursts can be considered an identifying characteristic of the MINO and aid in his identification.

As the species has been but recently classified although it is now recognized as having long been present, there is a considerable movement afoot to have it placed in the "Varmint" category and a permanent open season declared on it. However, before any such radical step is taken it should be noted that experiments have shown that the MINO can be trained, at least in some cases.

It has been discovered that if the MINO is confronted with and surrounded by work whenever found on the property or premises it will do one of two things. Either it will immediately disappear and skulk in the distance to appear only at rare intervals or it will very gradually lose its allergy to work and even begin to exhibit evidence of enjoying it. But the training process is slow and tedious and subject to many set-backs. It is hoped that any clubs finding the MINO present will observe it and conduct experiments on its training.—BURR LEYSON.



These are the simple tools used in making .40-82, .40-70 WCF, .45-60, and similar obsolete cartridges out of .45-70 cases. The rod is used to expand the neck of the .45-70 case and the wooden block to hold the case head during the expanding operation

By
Vernor
Sackett

cartridges to keep

A NUMBER of owners of such rifles as high-serial-number model 86 Winchesters are feeling a pinch now that ammunition for many older calibers is no longer made. However, satisfactory loads in such calibers as .38-56, .40-65, .40-82, .40-70 WCF, .45-90 WCF, .40-60, .45-60, and many others can be made up on the .45-70 case, which is still being made commercially, with a few simple tools.

To make the .45-70 case suitable for use in the .40-82, for example, its shape must be altered. If the rifle has a tubular magazine, the neck of the case will have to be reduced for about $\frac{3}{8}$ of an inch, thus making it a little smaller than the diameter of the bullet being used and requiring that only the exact portion in which the bullet is to be seated be expanded to the size of the bullet. What is wanted is a cartridge of the same over-all length as the factory .40-82 shell, which is $2\frac{3}{4}$ inches. Thus the cartridge will have a wasp-like 'waist' in the restricted portion of the case neck, which is immediately below the bullet and ends where the case returns to normal. The waist will prevent the bullet from being thrust back into the case by the pressure of the magazine spring or recoil.

If you happen to have a factory die for the .40-82 case, and it makes the case neck small enough, you are lucky. I got a die from R. D. McCaslin, Centralia, Kansas, in .40-65 caliber which works fine for both .40-65 and .40-82 calibers and has some other useful purposes as well (which I won't go into here other than to say it helps in the .40-60 case reforming job). If you don't choose to buy a die and can cut off the chamber portion of an old barrel in .38-56 caliber, it will do very well. Or you may have a machinist friend who can make a suitable tapering tube to serve as a case forming die.

Some suitable lubricant is needed for working the brass. I have found nothing more satisfactory than mutton tallow made by simmering mutton fat slowly and pouring off the liquid as it forms. When cool I liberally work some of the tallow into a cloth, which I use for wiping a thin film on the case. Too much lubricant on the case will form an air trap in a die and dent the case, which can be avoided by wiping out the die from time to time.

Be sure each .45-70 case is perfectly round at the mouth, as otherwise the case will fold inward at the point of imperfection. However, if this happens, the case is usually redeemable by filling nearly full of fine blackpowder, packing in some paper, and firing the blank in a .45-70 rifle. Then

clean the inside of the case, as one must always do when blackpowder is used, to prevent corrosion.

The first tool needed is an expanding rod made from a steel rod about .6 inch in diameter and four inches long. Turn one end of the rod to a straight taper measuring .360 inch diameter at the tip and .409 inch diameter at a point two inches from the end. An additional inch of the rod may be left .409 inch diameter or the taper may be continued if found more convenient. The balance of the rod is held in vise jaws during the operation of expanding the case mouth.

Next is needed five inches of a spade handle or something comparable is needed to hold the case head and to protect the primer during the process of expanding the case with the expanding rod. Into the flat end of the handle, bore a $\frac{3}{16}$ inch hole for a half inch or so. Using the hole as a center, bore a recess for the cartridge rim head about $\frac{1}{8}$ inch deep.

Last a hardwood block of $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{4}$ inch with a shallow recess for the case head in the center is needed. Bore a $\frac{3}{16}$ inch hole through the block and it is ready to be used in the bullet seating operation.

With the expanding rod secured in a vise, wipe the portion of the rod which contacts the brass with the lubricating cloth, so that there will be a minimum of friction, and drive the case over it by fitting the recessed piece of spade handle over the case head and hitting it with a mallet. Now slip a rag over the case head and free it from the expanding rod by giving it a sharp tug straight to the rear with a pair of pliers.

Many styles of bullets will prove entirely satisfactory in these cartridges. I usually have an Ideal mold for bullet number 403169, or a Winchester mold for a similar missile, so usually these are my choice. Since the groove measurement of the .40-82 runs about .408 inch and I use smokeless powder, I prefer to have a bullet that large or a shade larger. If your mold casts a bullet somewhat smaller than .408 inch, you may use 82 grains of FG blackpowder with good results. Blackpowder can usually be depended upon to upset the base of the bullet enough to fill the grooves tightly. For general use, a bullet as it comes from a good mold need not be sized. However, perfection of the bullet base is of utmost importance for good accuracy, and I have found imperfection of the base a frequent cause of poor results with the beginner.

With the case now ready for the bullet, charge it with about 21 grains weight of Dupont 4759 smokeless powder.

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There are many other excellent powders and charges, but I have found this one to be entirely satisfactory, particularly for the novice. The case should now accept the bullet base fairly freely for about 1/16 inch. With the live primer in the case head fully protected by the 1½ x 1½ x ¾ inch hardwood safety block, and the bullet lubricated with tallow and beeswax, the bullet can be squeezed carefully to its proper depth—about 3/16 inch—with the smooth surfaced vise jaws or another press. If you want the case mouth cinched a little more tightly on the bullet, press the bullet into the tapered end of a short piece of metal tubing of the proper diameter, seating the case head in the safety block in the process, of course. The crimping should affect not more than 1/16 inch of the case mouth, which is the only part that might be loose.

If you have, as I do, a few old blackpowder-type reloading tools about the place one may be used for priming the case,

For the series of cartridges which are shorter in length than the .45-70—the .40-60, .45-60, etc.—have a case die cut to the same length as the unfired case and let the portion of the .45-70 case to be cut off protrude into an iron nut placed between the jaw of the vice and the end of the die. Saw the protruding portion off with a hack saw, file flush, and clean out the burr with a knife or reamer.

In some calibers, such as the .40-60 Marlin, a little of the inside case rim will need to be turned off for use in most rifles, as many of these calibers took a case with a thinner rim than the .45-70.

A little trick that works well in such calibers as .45-90 and .40-82 is to lubricate only the two base grooves of the bullet in the usual manner. Then, after seating the bullet, to give the same overall cartridge length as the factory product, dip the seated bullet in a mixture of tallow and dictaphone record wax almost, but not quite, to the case mouth. If you get

the old timers booming

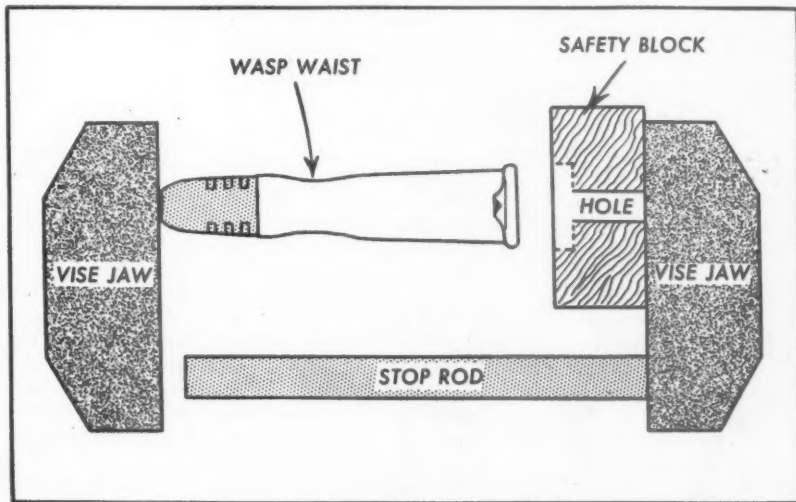
if it accepts a case with this size head. If it happens to be otherwise suitable, it may also be used in bullet seating. These old tools are most convenient in getting the bullet seated to exactly the right depth in the instance of cases like the .45-70—.40-82 combination, in which the bullet is finally placed far out in the case mouth. When using the vise method, a stick should be cut to just the right length to catch the jaws and prevent them from seating the bullet more or less deeply than we desire. A metal rod is better, as it will not give, but hardwood will do very well.

If the rifle is a single shot, the problem is very much easier, for you do not need to worry about making a 'wasp waist' in your case but only to see that it is tight enough at the neck to prevent the bullet falling from the case of its own weight. If the rifle is to be used as a single shot, the cartridge need not have the bullet seated to work through the magazine. However, the bullet should always be seated just as far out of the case as possible without projecting into the throat so that the lands will pull the bullet from the case when the cartridge is removed from the chamber, unfired. This type of seating always makes for the best possible accuracy.

I have found that an Ideal .405 Winchester caliber double adjustable chamber, which may be purchased for \$2.00, is ideal for me with the safety block in seating the .40-82 and .40-65 to exactly the right depth. The chamber has the added advantage of crimping the case, if desired; however, the lead must be enlarged on a taper, slightly, to take the larger-bodied case. If you are loading the .45-90, I would recommend that you buy the new Ideal number 310 tool for the .45-70 (obtainable for \$9.50 and postage). The 310 tool will do a perfect, all-around job on the .45-90, and the handles and priming device may be used for all the series of cartridges, since the head is the same for them all. With extreme adjustment inward, the 310 tool for the .45-90 will do for the .45-60.

it on the case itself, scrape and wipe it off, for lubricating the case itself allows it to slip back against the bolt face too readily, giving the bolt face a larger portion of the pressure thrust than it should have. The wax-tallow dip forms a thin thimble coating over the portion of the bullet, affords regular lubricant, and makes a somewhat easier handling cartridge than the more messy exposed lubricant itself. Also, the wax film fills in that portion of the chamber usually occupied by the original case neck, and thus the bullet is supported a little better and held in line with the bore. Other advantages are a better gas seal as the rear of the bullet moves through the chamber, and an abundance of lubrication right where it is needed as the bullet moves into the barrel throat. No doubt there are other wax compounds that will serve.

In passing, it might be well to say that the .40-82 caliber cartridge will work equally well in the .40-70 WCF caliber rifle. The .40-70 WCF case was the same as the .40-82, except that it was necked back a little farther for use of a 330-grain bullet and 70 grains of blackpowder instead of the 260-grain bullet and 82 grains of blackpowder which was used in the .40-82 cartridge. FG granulation blackpowder was used in both calibers. ● ● ●



A vise, a block of wood, and a dowel to control overall cartridge length, are the only devices required for seating bullet during loading operation

Is .30 Caliber Shooting On The Way Out?



IS HIGH-POWER COMPETITION BEING SUPPLANTED BY SMALLBORE RIFLE SHOOTING? THE BIG BORES HAVEN'T ATTRACTED MUCH INTEREST IN YEARS NOW

By Col. W. D. Frazer

WHAT GOES ON in the rifle shooting game today? Why is it that there are 75,000 members of the National Rifle Association shooting the smallbore rifle, 25,000 the pistol, but only 10,000 active in .30 caliber practice?

Has the high-power game lost its glamour and appeal to such an extent that we are content to become a nation of miniature riflemen? Must we depend upon a government subsidy to keep alive the branch of rifle marksmanship that was predominate for a half century prior to the last war?

These, and a score of similar questions, are in the minds of those riflemen who are not satisfied to go half way in their sport, but want to play the billiards of the game—.30 caliber shooting.

If we can answer these questions and determine just what is responsible for the unsatisfactory conditions presently existing, we may be able to remedy the trouble.

Smallbore shooting has undoubtedly stolen the show, and its popularity has been responsible for a falling off in the activities of the big-bore game. It has won its place in the sun, not through any popular appeal to the imagination, but the hard way in an uphill drive against opposition and ridicule on the part of the .30 caliber clan.

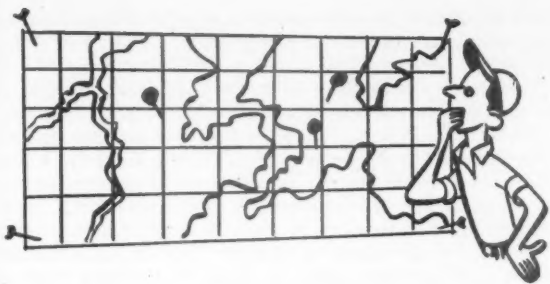
One arms manufacturing company organized over twenty-five years ago a Junior Rifle Corps which was later taken over by the NRA. That organization, and the smallbore shooting units in high schools and colleges of the country, organized by the Reserve Officers' Training Corps in the early twenties, had much to do with the ultimate success of what was once called the 'pipsqueak' game.

Other factors that helped the smallbore game along were cheap ammunition, ease of finding space for standard indoor galleries and for short outdoor ranges. These last two assets are the main advantages the miniature game has over .30 caliber, for the smallbore addict spends just as much money on rifles, telescope sights, fancy gun slings, shooting coats, and other gadgets as the high-power crank does.

The big-bore game is now faced with the handicap of a scarcity of rifle ranges for medium- and long-range practice, and even short ranges are becoming fewer and farther apart. The few short ranges now available at small Army posts and the longer ones of larger posts are now being used to capacity for the training of military personnel and are not available for the use of civilian riflemen as before World War II.

The civilian ranges are also having a struggle for existence against expanding municipalities. These range problems





indicate that sooner or later we will have to resort to the construction of ranges along lines of those in European cities, and this in turn means limiting our firing to about 300 yards.

The adoption of autoloading military rifles and carbines, and the modern trend in other military weapons, has and will continue to affect military policies in marksmanship training, which may become pronounced as time goes on.

Riflemen have received so many favors from the government in the form of cheap ammunition, surplus arms, target supplies, and range equipment that they have come to expect it to continue indefinitely. It is time to realize that we must expect to pay for our sport as other sportsmen pay for theirs. But because rifle practice is of potential value in national defense, we should be able to expect some help, as in the past, from the Director of Civilian Marksmanship. Issues of .30 caliber ammunition to rifle clubs can best be used to qualify new members and so encourage them to take up the high-power game.

Many riflemen believe that the discontinuance of the national rifle matches was a knockout blow for the .30 caliber game. Those matches were a great incentive to civilian riflemen to train for and compete in big-time competitions. Transportation to the matches at government expense for a National Guard and a civilian team for each State, and the issue of match rifles and ammunition to teams and individuals competing, was a great inducement to attendance at those fine shoots. However, it is encouraging to note that regional and national tournaments for the high-power shooter are being held this year—the nationals in cooperation with the Marine Corps—for the first time in eleven years.

It is estimated that there are only about 500 American riflemen interested in .30 caliber free-rifle shooting, in spite of the fact that there has been a tradition back of that sport in this country and a persistent clamor for its support. Since the old Schuetzenverein faded from the picture during World War I, efforts have been made by a small minority group to revive that high-class deliberate marksmanship. It had a revival in 1921 when we entered a team in the matches



of the International Shooting Union, but with the ready availability of 600 and 1,000 yard ranges at that time the 300-meter free-rifle game failed to attract many followers in this country. After four straight wins, five successive defeats, and a final triumph in 1930, it was decided to withdraw from further competition in International free-rifle matches. The reasons at the time for our action were (1)

the expense of sending our teams abroad each year and (2) the complex problem of arranging for and conducting tryouts for the limited number of widely scattered shooters who were interested in the free-rifle game. Now, in the light of post-war range conditions, we are trying again and have re-entered the International Matches in the last few years.

It is this writer's opinion that there is another reason for the loss of interest in high-power shooting. It is our inexcusable and colossal failure to encourage, and promote properly, target practice that would appeal to hunters and improve hunting marksmanship.

We have been so dominated by standardized military target practice and smallbore shooting that we have failed to give reasonable attention to that great field of marksmanship in which the big-game hunter and the predator shooter is interested.

With big-bore shooting conditions as they are today, we must decide—and soon—whether we want to revive the game in all its glory or let it sink into oblivion.

There is only one answer to that question. We should put high-power shooting back on the pinnacle it occupied so prominently for a century and a half. We should encourage big-bore shooting because it has all the fine qualifications of a great outdoor sport and some attributes that other games do not possess. We must revive the game if we are to regain and maintain our former prestige in Olympic and International matches with military and free rifles. We



must continue target practice with the .30 caliber rifle in the interests of military marksmanship for national defense. In so doing, we should not relinquish efforts to promote long-range shooting, for it is tops in the game and the real test of shooting know-how with the rifle.

If we are agreed on the revival of the high-power game, we are then faced with the sixty-four dollar question: How can this be accomplished?

First, we must give up the idea that the success of the game depends on the renewal of the National Matches as formerly conducted at Camp Perry, Ohio. Faced with our post-war national debt, Congress is not going to appropriate money in the future to pay the traveling expenses of competitive teams to engage in rifle matches, hockey matches, or football games.

At the Denver convention of the National Rifle Association in 1949, the .30 caliber committee panel discussed all angles of the problem and adopted a motion recommending that plans be drawn to inaugurate a high-power rifle program to culminate in a small scale national match based on the elimination principle in state and regional tournaments. Since that meeting, an Open Championship Committee has studied certain aspects of organized shooting competition and has adopted decimal targets for use at 100, 200, 300, 500, and 600 yards. The Committee also suggested a short-range 200-yard course as well as one for longer ranges up to 500 yards. This program has merit. But what are the means for putting it across?

We don't expect a tree to grow and flourish without good roots and fertile soil. The roots of our organization are



members of local rifle clubs. If we have a young and enthusiastic membership in a club, with good leaders who are willing to devote time and effort to its advancement and will encourage .30 caliber practice, it will naturally follow that competition, which is the life blood of American sport, will soon take over and run the gauntlet of local, inter-club, state, and regional matches. The fertile soil with which to feed the roots should come from two sources, the Juniors in our clubs, and the big-game and predator hunters of the country.

Juniors taking up smallbore shooting are generally quite enthusiastic while learning the game but are very likely to drop it as they get out of their teens to take up some more colorful sport. If at that critical time they were introduced to the high-power game, they would get a new incentive to continue their rifle marksmanship.

I have had three tours of duty with the R.O.T.C. of the University of Washington, Seattle, Washington, eleven years in all, and that experience—plus membership in rifle clubs in many other parts of our country and its possessions—is the background for my belief that the junior rifleman is our greatest hope in the revival of the .30 caliber game.

In 1919 we were able to have a new indoor range installed in the University of Washington armory and began smallbore instruction for the military units and for any boys and girls of the university who were interested in the sport. By the end of the college year, we had taught 92 girls to shoot in regular classes and hundreds of boys. Our rifle club fired postal matches with other teams throughout the land with satisfactory success.

At the beginning of the spring quarter there was so much interest in rifle shooting that we decided to go one step further. We had a liberal supply of .30 caliber war-surplus ammunition on hand and a fine rifle range available at Fort Lawton on Saturdays. We took as many of our rifle team members as we could handle, and introduced them to the service Springfield and military practice. The youngsters got a great kick out of the new game and found new interests in firing at ranges up to 600 yards. In the excitement of rapid fire at the shorter ranges they got quite a different thrill than they did in the smallbore shooting, and soon boys and girls were sold on the .30 caliber sport.

Now, many years later, some of them are still shooting in both smallbore and big-bore competitions. Last year one of our former University students won the Grand Aggregate Match at the Washington State .30 Caliber Tournament and several others were well up in the scores. Former University girls have won two national intercollegiate championships, and one other, Mrs. Alice H. Bull, is an outstanding shot who has been elected as the first woman director of the NRA. We believe that our results have proved that it pays to get juniors into the .30 caliber game.

Let us discuss for a moment that other fertile source of high-power recruits for the target game.

In April 1949, the NRA had 316,850 members; 110,500 of these were participating in target practice, as indicated in the opening paragraph of this article. In a recent poll conducted by the Association to determine member interest, it was found that 22 percent of NRA members are muzzle loading shooters, 39 percent handloaders, 44 percent big-game hunters, and 53 percent varmint and predator shooters. Many were interested in more than one of these activities.

It seems logical to believe that the 139,000 NRA big-game hunters, plus the many more thousands who are not members, do provide in this country a great reservoir of high-power target practice material. If these hunter riflemen could be induced to try an attractive form of target practice that they would enjoy *as a sport*, it would eventually lead to their becoming interested in four-position shooting and subsequently to competition work. As a result there would be less game crippled, the hunters would become better shots and, if they were called to the Colors, they would be of much greater value to the nation.

The idea of promoting hunting marksmanship as a means



of creating interest in high-power target practice is not new. It has been discussed time and time again by enthusiastic supporters of the target game, but as Mark Twain remarked about the weather "everyone talks a lot about it but no one ever does anything about it." The running deer matches at Camp Perry were very popular until the range was knocked down to make room for expanded smallbore facilities. The Olympic matches and those of the International Shooting Union always include running deer events.

Many rifle clubs have in the past installed running deer courses which they operate occasionally but generally only just before the opening of the big-game season, after which it is neglected. To put running deer matches over in a big way will require that hunting marksmanship be firmly supported and promoted not only by local but by state and national organizations. In 1947 the Seattle Rifle and Pistol Association, with a membership of less than a hundred, decided to include hunters' matches in its outdoor program and held one such shoot each month. The firing was offhand at stationary and disappearing deer and bear targets silhouetted above the military target butts. It proved to be lots of fun. Later a fine running deer course was installed and finally a manually operated rising target on which silhouettes of mountain sheep, goats, and grizzly bear could be exposed for a short interval. They were fired at from the 100-yard firing point. Only rifles legal for deer hunting under Washington State game laws were permitted.

After a three-year tryout of including hunters' shoots in our outdoor match programs, records show that more than twice as many entries were made in the game shooting competitions than in any of the other matches, including small-

bore. The .30 caliber qualification shoots were second in the number of entries. Our several annual turkey shoots are all fired at game targets, and we have run as many as 210 entries through the running deer match in a five-hour shoot.

As a further attraction to riflemen who like to shoot for fun and see their hits registered as soon as they are made, we have a group of three hanging armor-plate bullseyes of different sizes always available for practice at 200 yards. These targets give a resounding ring and a decided wobble when hit by a high-power bullet. We are now installing a series of bobbing predator silhouette targets and will conduct shoots on them open to any rifle.

When some of our shooters attended the big Annual Summer Rifle Tournament of the Alberta Provincial Rifle Association of Canada in 1949, they learned that for four years that wide-awake organization has been conducting two special re-entry hunters' matches on five evenings of the tournament. A daily cash prize was given for the highest double score on running deer and the rising bear targets and four special gold medals for the highest weekly aggregates. Our Canadian friends have the right idea.

One other item that has produced hunter interest in target practice here is the welcoming of non-member big-game hunters to our range facilities for several weeks just prior to the opening of the game seasons in the Northwest. On week-ends we provide a staff of experts to assist these visitors in sighting-in their rifles and checking them on game targets. Few hunters know much about sight adjustments, especially with telescope sights, and visitors have been very appreciative of our help. Many have joined our club as a result of one visit to the range. Three years ago we were able to enter only two teams in the Washington State Annual .30 Caliber Tournament but in 1949 we had seven teams and 85 percent of the shooters were big-game hunters. We now have 246 paid members, the majority of whom are hunters as well as target shots, and we think we are justified in believing that our policies and comprehensive competition programs have been responsible for these results.

In conclusion, the following summary of suggestions is offered as ways and means of revitalizing the high-power target game:

1) Sell rifle marksmanship to the country as a *sport* and emphasize *shooting for fun*.

2) Make a nation-wide drive to enroll the several million hunters in a new target game that will be attractive and beneficial to them.

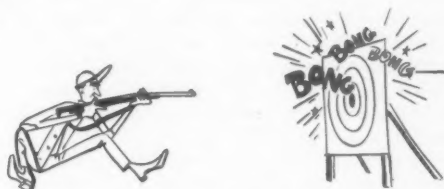


3) Do this by having the NRA standardize hunters' matches at running deer and other silhouette game targets. The NRA has had an excellent running deer target available for ten years but few clubs have shown any interest in it. Give qualification badges and other awards as in bullseye competitions.

4) Make the conditions of the running deer match the same as those prescribed for the Olympic and International matches.

5) Intensify efforts to establish community shooting grounds located to serve shooters within a reasonable radius. Do this by a coordinated effort of all the rifle clubs within an area and construct safe, permanent target facilities for every kind of practice along the lines of the ranges of European cities and South America.

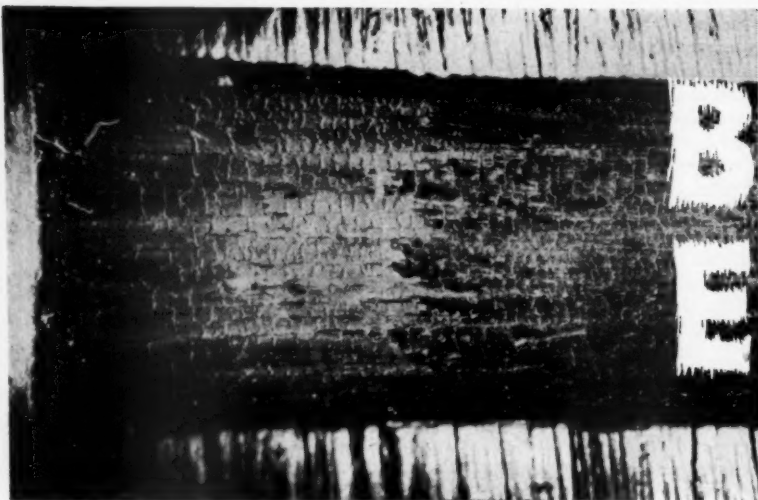
6) Promote .30-caliber practice for the older juniors by encouraging them to fire the qualification courses provided by the Director of Civilian Marksmanship, Department of the Army.



7) Encourage the handloading of .30 caliber ammunition and the conversion of obsolete military arms into sporting and target rifles.

8) Renew efforts to popularize .30 caliber military and free-rifle practice by carrying on local, state, and regional competitions to develop national and international match material. This can be done by arranging frequent inter-club shoulder-to-shoulder team matches with neighboring rifle clubs on the league basis which has been so helpful to the smallbore game.

These suggestions are not original but the point to be brought out is that in the State of Washington we have, from a population of about two million, 24,300 NRA members and stand second in the nation. Our neighboring states of Oregon and California are in third and first places respectively. We on the Pacific Coast are accomplishing more in all kinds of rifle practice than any other region of the country and we believe that we are on the path to success in reviving high-power shooting. Our accomplishments in Washington State are the results of methods herein described. If other states and regions will show as much achievement in rifery, we will soon have the answer to that sixty-four dollar question and can state with authority that the .30 caliber target game is not on the way out. Let's keep going!



Erosion pattern in bore of a rifle barrel

BARREL EROSION

By Philip B. Sharpe

WHEN A MODERN high-power rifle, which once was capable of making beautifully tight groups, begins to produce groups which run from three to five times the size, shooters say that the barrel is 'shot out'. Just what happens?

Long ago we learned that there are just two enemies of barrel life—erosion and corrosion. The latter is rust, due to improper cleaning and storage, which is easily eliminated by the shooter. Erosion is caused by just one thing—shooting. It begins when the first shot is fired, and continues as long as bullets are put through the barrel. Accuracy life of any barrel is impossible to determine in advance. What the varmint shooter would call 'shot out—now inaccurate' would be entirely satisfactory to the hunter. The top-grade match shooter sets his own standards; he will discard his barrel when accuracy has dropped to the point at which it is still equal to the average new sporting rifle.

There are two ways to study erosion in a barrel. One way is as firing progresses with a special boroscope, an optical instrument, with a battery-operated electric lamp in one end, which is small enough to insert into the bore. With the device, the operator looks into the eyepiece lens and may study every square millimeter of the interior.

However, when shooting has been finished, the real study begins. The barrel is carefully sawed lengthwise so that the true picture of what has happened to the bore is revealed. The bore of the barrel may then be studied under relatively low magnification of from 15 power to 25 power.

It has been the writer's pleasure to sit in on numerous autopsies of barrels which have been worn out. Few barrels, however, have been sectioned and studied while still in prime shooting condition. This is the autopsy report on the barrel used in the barrel length and velocity tests described in the *AMERICAN RIFLEMAN* (February and March 1950).

The barrel of the Springfield used in that test offered unusual opportunities for study, since it consisted of the final length section of nine inches, through which 1,483 bullets had passed, plus 21 one-inch sections which had been amputated as the firing progressed, and through which varying numbers of bullets had passed. The original muzzle section of the 30-inch barrel had, for example, seen but 219 rounds.

The examination revealed: 1) different forms of erosion; 2) information indicating that torque or driving strain on the bullet shifts from the leading edge of the lands to the trailing edge; 3) the cause of tiny 'pits' in the bore; 4) the true cause of the blackening of the surface of the bore.

After the firing in the barrel length and velocity test had been completed, the barrel was thoroughly cleaned, wiped dry, and examined in the conventional fashion—by looking through it. No reader has a barrel in his collection, new or otherwise, which looked more beautiful than that bore did. Note that less than 1,500 rounds had gone through the barrel—and it should have been good for at least three times that amount of shooting.

The main 9-inch section, and all 21 of the one-inch sections, were carefully split open and several hours were spent in studying the facts revealed.

First, let's look at the main section. The barrel had been chambered for the Model 1903 cartridge—not the Model 1906. The two differ only in that the neck of the 1903 cartridge is .07 inch longer than the 1906, and thus the short case necks failed to fill the chamber neck by that amount. The normal chamber and neck were well polished but this short section was burned to a dull black. Under 15 power magnification, one could see a faint checking of the surface in an alligator pattern—irregular, but with the cracks predominately circumferential.

The 'alligator pattern' should be explained. Most readers have noticed what happens to bare soil in the summer during a hot and dry period. It shrinks and cracks in a uniform, yet irregular manner. Examination of dozens of barrel interiors has revealed this form of erosion. It is explained by metallurgists as being created by the tremendously high temperature of burning powder gas super-heating the surface or skin of the bare surface. The heat remains in contact with the surface such a short time that it does not penetrate deeply, and the cool metal below causes sudden shrinkage, which cracks the skin.

In a normal chamber, the neck diameter is reduced in a sharp bevel or taper to groove diameter. Some barrel men call the section the 'forcing cone'. From this point, the lands are reamed out on a gradual taper conforming to the contour of the bullet to permit the bullet to start into the rifling. This section is termed the 'throat' or 'lead'.

A study of the forcing cone revealed a second type of erosion—what is generally termed the main form. The section was badly burned by the impact of the hot gas under pressure. It was burned and pock-marked to a lizard-skin finish. One could achieve the same effect with high-pressure sand blasting. The rough area extended into the lead for a few thousandths of an inch, where it ceased abruptly

and the bore was again soft black. Even in that rough surface, the alligator pattern could be faintly traced.

The barrel throat showed only the soft black finish with the alligator pattern. Presence of a land did not interrupt the pattern, which passed uniformly across the land.

As the study progressed forward, it was noted that the rifling was uniformly black—both lands and grooves—but lands were clean and sharp. The driving edge, which takes the strain of rotating the bullet, was cleaner than the trailing edge, indicating the customary minor gas cutting or leakage one frequently notices on bullets recovered from a backstop.

By the time the bullets had passed through the final inch of that 9-inch barrel (6.1 inches of rifling) a copper color was noted on the top surface of the lands. The alligator pattern but decreased in depth, size remaining uniform.

At this point, let's consider the checking of the bore. Even at the throat it was so faint that it was practically invisible to the naked eye. It was studied only under magnification with angle lighting. There is no way to measure the depth of these cracks but it is well to remember that the height of the lands is only .004 inch, and in comparison these checks were like unto your fine hardwood floor as against a large dining room table. Previous studies of eroded bores indicate that in advanced stages, these checks increase in width and depth only slightly.

In addition to the main pattern of erosion, throughout the barrel section there were slight cracks longitudinally in the bore—either in the grooves or on the surface of the lands. Strangely, these burned cracks, ranging from about .01 to .1 inch in length, did not follow the pitch of the rifling; instead they invariably ran parallel to the axis of the bore. Metallurgists have long noted their presence but have never been able to explain them. They are just unaccountable burned cracks; they should follow the twist of rifling but they don't.

The solution was determined purely by accident. Stepping ahead of the examination of the 27-inch section (measured from the breech end) the answer was clear. This inch-section of barrel had had only 329 rounds through it. It was also so far forward that both gas pressure and temperature had dropped considerably. On one land was a scratch about .1 inch in length. The rear end was microscopically burned while the remainder was clean. Apparently the scratch was caused by a cleaning rod being drawn backward through the barrel after pushing a patch through. Hot gas, trapped behind the bullet, penetrated that scratch and had just started to burn it. Probably, had that section of barrel seen the full 1,483 rounds of the breech section, the entire surface of the scratch would have been burned to make it unidentifiable.

By the time examination had reached the 12-inch section, from the breech end, which had seen 1,246 rounds, the erosion pattern was difficult to locate. At 14 inches from the breech it had disappeared.

The various portions of the barrel told an interesting story on the driving strains created by the gas in pushing the bullet through the bore. At 13 inches from the breech the lands had a light copper wash on top which extended slightly over the side of the trailing edge but not into the groove. On the leading or driving edge, the side of the land was coppered and this continued into the corner of the groove and itself about the width of one-third of the groove. No erosion pattern appeared here. It is believed that this same driving strain continued backward toward the breech, but was obliterated by the blackening of the bore.

By the time we reached the 15-inch section, from the breech, the picture had changed. The coppering of the groove

corner had shifted gradually to the trailing edge of the land. Could it be that the heavy initial push given to start the bullet had eased up and that the bullet had stabilized in its acceleration through the bore? By the time the bullets reached the 17-inch section from the breech end there appeared to be little coppering in the groove corners of either the driving or trailing edge. Coppering now began to cover the land tops and the center of the grooves.

These conclusions on the stabilization of the bullet in its passage through the rifling sheds light on the 'whip' of a barrel. It has long been known that barrel whip is reduced by increasing barrel diameter or weight—the added mass of metal absorbs the strains. We have long known that the whip of a light barrel is such that different bullets and different loads not only shoot to a different point of impact—there has never been a logical excuse for the location of this impact point. Possibly different bullets 'settle down' in the bore at different points, thus varying the whip.

Too long have we assumed that the acceleration of a bullet through the bore is a steady and progressive process. A study of the velocity loss figures, per-inch-of-barrel, in the March 1950 RIFLEMAN reveals that the loss is not constant—that at various points velocity actually increases. This is not news to the laboratories of the arsenals and arms plants, but they have been unable to explain it. Elaborate pressure tests have been run in laboratories equipped with special pressure guns

fitted with piezo-electric crystal gauges and cathode ray oscilloscopes. The results are photographed and show unaccountable 'flaws' in the uniform curve of the falling pressure line. In some way these still-unknown oddities must be tied to changing bullet resistance caused by 'settling down'.

As the bullet progressed toward the muzzle, the polishing action of friction was less noticeable. At the 24 inch length, only 562 rounds had been fired, and original tool marks were prominent. But the coppering in the trailing edge of the land-groove corner continued to

the muzzle of the original 30-inch barrel.

The final picture revealed was the answer to the black bore surface. A good used barrel looks as shiny as a mirror—opened up it is as black as velvet. Is it burned? No.

As studied from the breech end, the metal is a soft black, slowly tapering to a light gray. Under magnification the black is uniform in density. As it fades to gray, the color change is noted in the form of microscopic black dots. As the gray becomes lighter, bare metal appears between those dots, and when still lighter the dots change to streaks, until these too disappear in the little-fired forward sections. *That black color is nothing but graphite!*

Smokeless rifle powders are coated with graphite. The primary reason is it lubricates the powder and permits it to flow uniformly through the loading machines.

When a charge of powder is ignited, the resulting 'explosion' blows the surface graphite from the powder. The dust mixes with the gas and most of it is blown out of the muzzle. A small amount remains in the bore. It is run over and trampled down by each subsequent bullet, thus blacking and lubricating the surface. The next time you fire your rifle, open the bolt and look through the bore. You will see a pile of black dust in front of the chamber.

This explains, more or less, why continued cleaning of a well-used barrel still shows traces of black on the cleaning patch. You leave powder solvent in the bore a while and you loosen a little more of that graphite coating to wipe out with the next patch. The experienced shooter doesn't give his barrel too much of a scrubbing—that black is not only harmless; it is a useful lubricant. ● ● ●



Chart of velocities of A. O. Niedner's .25 Krag cartridge in the Hamburg rifle were taken in tests at United States Cartridge Company in 1912. Chambered at the time for the untrimmed Krag case necked to .25 cal., the Hamburg was later rechambered for the .25 cal. on the regular Krag case

Velocity of rifle

Bullet: A-1912, B, C

Powder: *Stg #1*, *Stg #2*

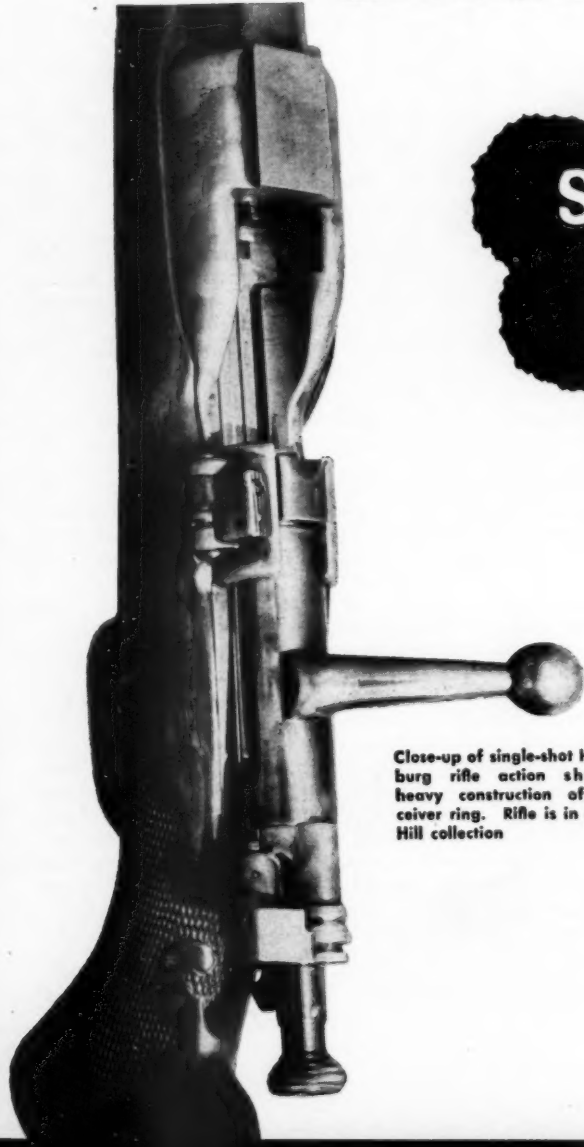
Primer: *Wm. C. 47 1/2*

Shell: *Rem-um.*

Weight	101.2	101.2	90	101.2	90.8
Grain	41.2	46	46	48	48
Number	Velocity at 75 feet	Velocity at 75 feet	Velocity at 75 feet	Velocity at 75 feet	Velocity at 75 feet
1	2836	3138	3225	3285	3376
2	2839	3105	3172	3225	3330
3	2847	3147			
4	2809	3130			

Remarks: *E = 2 1/2*, *V = 520 ft/sec*, *W = 71.8 lbs in lb*, *2g = 64.32 g = 32.16*

101.2 - 2.0002
7000 - 0.2451
5.1898
70.754
5.1776
30.1.2083
33673 = 2341.8 lb



Close-up of single-shot Hamburg rifle action shows heavy construction of receiver ring. Rifle is in R. S. Hill collection

SOME WILDCATS OF LONG AGO

By A. O. Niedner
As told to John Barsotti

ABOUT 1904 I became interested in developing small caliber, high-velocity cartridges—wildcats, as they are called today. That work continued to hold my interest until I retired thirty-five years later. My attempt to get accuracy and high velocity with early-day wildcat cartridges was thought a waste of time by Walnut Hill shooters. They would tell me I'd get my head blown off someday. But some of the results of my experimenting helped to bring in a new era in the rifle game. I believe I was the first man to make a cartridge that recorded over 3,100 feet a second velocity on a chronograph.

It would be impossible to talk about early day high-velocity cartridges and not mention Dr. Franklin W. Mann's name frequently. It was through him that I became interested in wildcat cartridges. Dr. Mann's book *The Bullet's Flight*, published in 1909, contained some information on his experiments with smokeless cartridges and jacketed bullets, which began about 1904. However, between 1904 or 1905, and

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In experiments with small bore cartridges conducted nearly fifty years ago, Niedner developed a load with a velocity over 3,100 feet a second

1916, when he died, he did a great deal of experimental work which was never published in book form.

There have been other men who tried to make small caliber cartridges of greater velocity than those made commercially but they were handicapped by having only black-powder—or rather poor smokeless—and no uniform primers suitable for their work. They were further handicapped by a lack of jacketed bullets.

There was Reuben Harwood, who experimented with the .22 center-fire cartridge in the 1890's. He was really the father of the .22 Hornet cartridge. Once I visited Harwood and found him trying to make smokeless powder. He had rolled out a mixture of ingredients onto a wide thin sheet on the kitchen table. His attempt at making powder was a failure, but he had had an idea and had tried to work it out.

Then there was Charles Newton, who designed a series of high-velocity cartridges about the time of World War I. He was the maker of the Newton rifle, and though I considered him a fine man I had no use for his rifles. Newton was after high velocity and tremendous muzzle energy—his trouble was too much powder and poor workmanship. Newton designed some good cartridges but his rifles were poorly chambered. Newton is credited with the origin of the .22 Imp or .22 Savage Hi-Power and the .250-3,000 Savage cartridge. The .250-3,000 came out about 1915. Actually, it is a shortened version of the original .25 caliber cartridge that Newton wanted to use. Newton's original design of cartridge was too long for the Savage Model 99 action so the case was shortened and a lighter bullet was used to get higher velocity. Charles Newton lost a fortune trying to manufacture his rifles during the difficult times of the first World War.

Dr. Mann had had considerable success with two-cylinder or base-band bullets in his experiments with both lead and jacketed bullets, so, when I brought out my first .22 caliber high-velocity cartridge about 1907, a base-band was the type of bullet I used. The case was the .32-40 necked down to .22. Bullets were all hand made with a cast lead core and a copper jacket, swaged together in a special die which formed a base band 1/16 inch wide at the base of the bullet. I tried base bands of different widths but 1/16 inch was about right. I consider a bore diameter bullet the most perfect ballistically, but without the base band the load would 'squib' as the explosion of the primer would blow the bullet ahead in the bore. The base band would take the rifling and give the bullet enough resistance to make the powder burn properly. The copper jackets were .22 short rimfire cases which had not had the rim shaped on them. I also used .22 long cases for jackets. I tried out a number of different bullets in weights of 60, 70, 75, 80, and 86 grains and one hollow-point bullet. The 60-grain sharp-pointed bullet, three-quarters of an inch long, was about the most accurate. With 19 or 20 grains of Lightning, the 60-grain bullet made a flat-shooting load.

I made Mr. Linwood Lewis a rifle on the Stevens 44½ action and chambered it for the .22 base-band bullet cartridge. The rifle weighed about six pounds and Mr. Lewis did some fine shooting with it using jacketed bullets. At Walnut Hill he made a group at 200 yards range that was unusually small. He fired eleven shots that measured slightly larger than one inch; nine of the shots cut a ragged hole that was just under three-quarters of an inch in measurement.

I got up the .22 high-power, base-band bullet cartridge for 200-yard offhand shooting in Schuetzen matches as I wanted a small caliber cartridge that had speed and accuracy for fine target work. At that time jacketed bullets weren't permitted in Schuetzen matches, and I had to get permission

from National Schuetzen Bund headquarters to use my new cartridge in the big matches at Union Hill in the late spring of 1910. Linwood Lewis, Mr. Jerome E. Lynch, and I all shot Stevens 44½ or 45 rifles which I had made up for the .22 base-band bullet cartridge. We made fine scores in the shoot at Union Hill. Mr. Lewis tied for first place with Fred Ross, and I came close to making a record score for three shots offhand at 200 yards on the German Honor target with 1½ inch center or 25 ring. My first and second shots were 25s but my third shot was a 19 at 9 o'clock.

Originally I made the .22 high-power base-band bullet cartridge to load by breech-seating the bullet ahead of the charged case like the old-time benchrest and Schuetzen shooters used to load their .32-40 and .38-55 caliber single-shot rifles. Only instead of using a special tool, I used the cartridge case as the bullet seater. The cases were made with the outside neck diameter of the same size as the bullet. All I had to do was drop a bullet into the chamber, push in a loaded case, and close the action; the case seated the bullet



An early Niedner wildcat rifle. Sharps-Borchardt action rebarreled for .25 Krag cartridge by Niedner had a cocking knob added, making what Niedner calls a 'bolt-lever' action. Rifle is in Homer E. Reid collection

with the base band just touching the lands. For lubrication I would blow a pinch of graphite through the bore before starting a string of shots. I used a Leopold oleo and graphite wad in the neck of the case. It helped to give long barrel life by preventing erosion. Since I did a lot of shooting, I never had much use for a cartridge that ruined a barrel in a couple of thousand shots. Some of my .22 base-band bullet rifles were fired thousands of times and continued to give fine accuracy.

Later I redesigned the cartridge. Some shooters wanted to use the .22 base-band bullet on woodchucks. I made the neck diameter of the cases a little larger and reamed the mouth of the case to about the depth of the base band, leaving a shoulder, so a bullet could be seated in the case. For these cartridges I used both the .32-40 cases and .28-30 Herrick-Stevens cases; I preferred the .32-40 case. An oleo-graphite wad was loaded behind the bullet. This fixed ammunition was accurate for hunting purposes, but it would not give the extra fine accuracy of the breech-seated bullet method of loading.

I rebarreled and rechambered Winchester, Remington-Hepburn, and 44½ Stevens single-shot actions and rifles for the .22 high-power cartridge. The heavy 44½ Stevens action

was one of the best for the cartridge. It was made for smokeless powder, and the camming action of the breechblock helped to seat the case. I chambered all of my barrels very tightly, making it unnecessary to resize cases. I liked a close chamber and found that to get fine accuracy it is important to do as nearly perfect a job of chambering as is possible.

Of course, I had to supply cases and bullets to those customers who bought .22 high-power rifles. My wife helped me make the .22 base-band bullets as I had my hands full running the shop, working with Dr. Mann, and doing all the shooting I could. My wife cast the lead cores for the little bullets with my bullet-casting machine and I swaged them into the copper jackets on a press. It took a lot of time and labor to make good bullets. The bullet-casting machine, or pressure pot, was designed by Dr. Mann, Harry Pope, and myself in order to make lead bullets without air holes in them. I made four of these pressure pots, one for each of us and one for Mr. Henry C. Warren, another Walnut Hill shooter. The joints of a mold would have to be tight or I could squirt lead out of it with that outfit.

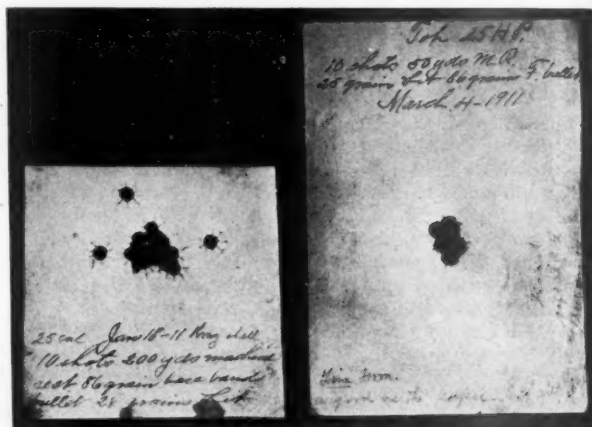
I always considered the .22 high-power base-band bullet cartridge to be about the most accurate cartridge I ever got up. Some very tight groups were made with it at Walnut Hill in the days before the first World War. When conditions were right, it would make 1½-inch and sometimes 1-inch groups of ten shots at 200 yards. With fixed ammunition like we used for woodchuck hunting, it was not difficult to keep all shots inside a four-inch circle at 200 yards.

One early wildcat cartridge rifle I made on a 44½ Stevens action for Reverend I. James Mead, a benchrest shooter at Walnut Hill, who fired under the name of I. James, was a very accurate little rifle. We fired some 10-shot groups with it at 200 yards that measured one inch. After Reverend Mead died, I sold some of his rifles for his family and F. J. Sage bought the Stevens and used it for several years. In September 1914, Sage sent me a report, which I still have, concerning that .22 high-power rifle. Sage reported 15/16 inch, 10-shot groups at 100 yards and 2-9/16 inch groups at 200 yards. Sage's favorite load was 24 grains of 1911 Pyro powder and the 60-grain bullet with about one-third of the lead tip exposed. For lubrication he used an oleo-graphite wad in the neck of the case. He got velocities up to 2,830 feet a second with 25 grains of Lightning, with an average velocity of about 2,750 feet a second, these being recorded on the United States Cartridge Company chronograph. In 1916 James Burns chronographed the rifle and cartridge again for Ned Roberts at the same company. With 23 grains of DuPont No. 15 Smokeless and the 60-grain bullet, he got an average velocity of 2,910 feet a second for five shots. With 25 grains of No. 15 powder and the 60-grain bullet, the velocity averaged 3,310 feet a second. In each test the bullet was breech-seated ahead of the case and oleo-graphite wads were used behind the bullet. Both Roberts and Sage shot the rifle many thousands of times with no signs of bore erosion.

Dr. Mann and I did a lot of experimenting with .25 caliber cartridges from 1906 on, using various cases and bullets. We tried the .25-36 Marlin, the .30-40 Krag, and the 7 mm. resized and necked down to .25 caliber for a base-band bullet. We decided the .30-40 Krag was the most suitable case for our experimental purposes. It held plenty of powder; being a rimmed case, it worked well in single-shot rifle actions. We reshaped it to a number of different overall body and neck lengths and tried out many types of .25 caliber bullets. We made and used bronze and steel bullets which we returned on the lath. We had to solder a German silverbase band on the steel bullets, which took a lot of careful work. Harry Pope had tried gilding or copper plating lead bullets so we tried it too but the results were not satisfactory. Then we began making our own copper bullet jackets, drawing them

through a series of dies and swaging them to a cast lead core. Finally, we began using 117-grain .25 caliber jacketed factory bullets which could be reshaped in a swage to suit our needs. These commercial bullets saved a lot of time and hard work. It is hard to convey in a few words the efforts we put forth to make good bullets; we knew it was necessary to have the best possible bullets, if we wanted accuracy.

Along in early 1911, I received an order for a .25 caliber wildcat rifle from a run-of-the-mill shooter. As every barrel-maker knows, once in a while a barrel will turn out to be extra fine, what we used to call a 'gilt edge' barrel. The one I made for that man was in that class, an extra fine and accurate barrel. It was put on a 44½ Stevens action. When the rifle was ready, the customer and I went out to Walnut

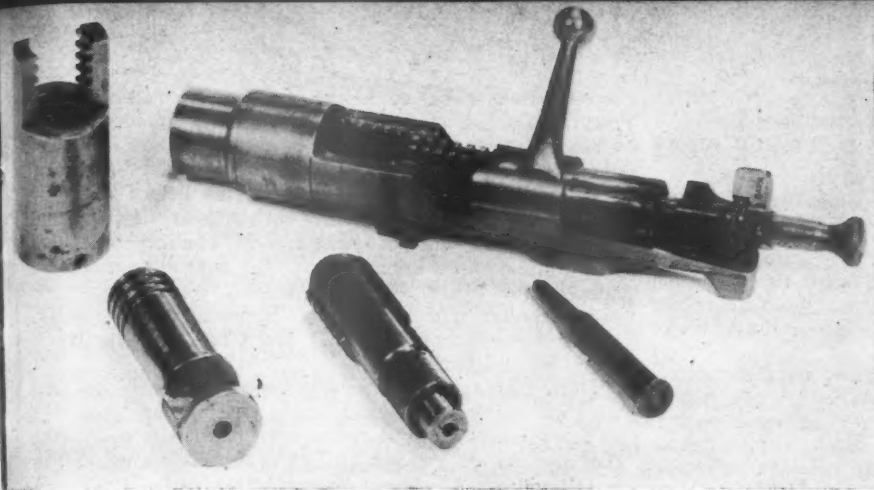


Two groups made with .25 Krag cartridge using Mann-Niedner base-band bullet. Group at right, measuring ¾ inch between centers of widest shots, was fired at 50 yards on March 4, 1911, at Walnut Hill by Niedner while testing a new rifle for a customer. Two-hundred yard group at left measures 1¾ inch horizontally, center to center of widest shots, and ¾ inch vertically

Hill range to test it in the Pope machine rest. The rifle was chambered for the Krag shell. Firing that day at 50 yards with an 86-grain, .25 caliber base-band bullet with 25 grains of Lightning powder, all 10 shots cut into one hole ¾ inch from center to center of the widest shots. By the time I was ready to fire the last shot I was in a sweat, hoping to keep it in the group. It went in with the others, making a group easily covered by a dime. When I brought the card back from the target butt I was mighty proud of that barrel. The man I had made it for looked at the group and then said, "It's a nice group all right. But the gun will do better than that, won't it?" I felt like telling him to go to hell! The card was sent to Dr. Mann, who sent it back with the comment, "Fine form—as good as the paper, both gilt edge."

Of all the rifles I have made and used, there was none I thought more of than the old Hamburg rifle. It was used a great deal in my experimenting with wildcat cartridges. The rifle has a history all its own in the wildcat field. The Hamburg rifle was designed and built early in 1912 because Dr. Mann and I needed a stout action to experiment with high chamber pressures and high velocities. It was a bolt action, made in my shop on Beacon Street in Malden, from "White End" steel. It was built to stand up under pressures from 70,000 to 100,000 pounds per square inch. Using it, Dr. Mann and I split four barrels firing high-pressure loads in the V-rest, but the action took everything fired in it.

It was Dr. Henry A. Baker, a great benchrest shooter, who named the Hamburg rifle during a woodchuck hunt at



Improved Hamburg action with screw bolt made by Niedner in 1913 was single shot for high-velocity cartridges. Unfinished action, shown here with original gauges and .25 Krag cartridge, made by Niedner, are in collection of M. G. Van Way

Shushan, New York, in May 1912, when the rifle was new. Dr. Mann wanted to see what the long Krag .25 caliber cartridge would do on woodchucks, so at his request I made up a rather plain stock in a hurry, but the rifle was bedded right. I put double set triggers on the rifle and a 16-power telescope sight. It weighed 11½ pounds, which was heavy for a hunting rifle, but the weight made it hold nicely for shooting offhand. The first chuck I shot at was about 220 yards away. I saw him tumble when I fired, but Dr. Mann and Dr. Baker said I missed him. So I went up and got the chuck and carried it back to show them. The bullet had smashed it up so I had to carry it in both hands. Dr. Baker took one look and said, "That is a hamburg making rifle."

During that trip to Shushan I fired several targets with the Hamburg rifle. One group of 21 shots, one sighter and 20 for record, fired at 200 yards from the prone position, measured 2-11/16 inches vertically and 2-3/32 inches horizontally. The target was made with a load of 45 grains of Lightning and the 101-grain bullet in the long Krag case we used until August of 1913. Another target was fired at the same time for Dr. Mann with the Hamburg rifle and the load mentioned above. He had me hold on center and pay no attention to a 15-mile-an-hour wind that was blowing across the line of fire. The range was 200 yards. Fired from a prone position, the group strung out 3-7/16 inches with the wind but measured only 1-3/16 inches vertically. I thought it was pretty good shooting.

The Hamburg action was a single shot, lighter in actual weight than the Springfield but a lot stronger. Most of the weight was in the front part of the receiver, where it is needed. The bolt is 7/8 inch in diameter, weighs about 13 ounces, and has two wide locking lugs on opposite sides of the bolt head. The bolt head fits up into the chamber behind and around the rear of the cartridge case. That is the way a bolt action should fit; there is no reason to leave the head of the cartridge sticking out of the chamber unsupported on the sides. Recently Remington has come out with a very strong action on their Models 721 and 722 using that type of bolt. The Hamburg action was made with a one-piece extractor separate from the bolt but operated by it. Sliding in a groove in the bottom of the receiver, it will extract a case as positively as a ramrod pushed down the barrel. The firing pin is separate, screwed onto the cocking piece of the bolt. It cannot be blown out.

The original barrel was 34 inches long and rifled, with six lands and grooves, one turn in twelve inches. At first, the Hamburg was chambered for a special long Krag case necked down to .25 caliber. Dr. Mann had secured about 500 unnecked, untrimmed Krag cases from a government arsenal and I made up some of these in various body and neck lengths and with different shoulder angles. After

considerable experimenting, I chambered the Hamburg rifle for a shell that was 2-¾ inches overall in length with a ¼-inch neck. The next year, 1913, we decided to use the regular Krag case necked down to .25 caliber as results with it were just as good as with the longer case, and using the regular Krag case simplified the problem of making cartridges. In August of 1913 the Hamburg rifle was rechambered for the shorter Krag case and the barrel was shortened to 27½ inches at that time.

During these experiments with the .25 Krag cartridge, as it has been called, we used 86-, 90-, 101-, and 103-grain bullets with both cases. For the Hamburg rifles these bullets were made from commercial, soft-point, jacketed, 117-grain .25 caliber bullets by swaging them in a series of different dies. There was a point shaping die, a body die, and one that formed the base band. The base band was 1/16 inch wide and the bullet was seated in the neck of the case about 3/16 inch. The base-band bullet chambers were throated 60 degrees.

To prevent erosion in the bore of the Hamburg rifle two wax wads with graphite lubricant between them, or a mixture of vaseline and graphite, were loaded in the cases behind the bullet. I fired close to 20,000 rounds through the original barrel and when I sold the rifle to R. S. Hill a few years ago it was still capable of making good groups.

Harry Pope was present when we were taking the trajectory of the .25 Krag cartridge in the Hamburg rifle on Dr. Mann's 200-yard range. The mid-range trajectory measured 1.60 inches. When Harry saw that he said, "Niedner, you will soon be getting the up curve instead of down curve."

The Hamburg rifle was a great woodchuck gun. I used it on many hunting trips and my old records show I killed as high as thirty-four chucks in one day with it. When I held on one up to 300 yards, he was mine.

The United States Cartridge Company, in 1912, advertised the .28 Ross cartridge at 3,000 feet a second. During a conversation with Mr. Butler of that company he told me that the velocity wasn't actually 3,000 feet a second but so close to it that the Company advertised the .280 Ross at that speed anyway. Sir Charles Ross, who designed the Ross rifle and cartridge, had made some enthusiastic claims for his rifle and cartridge in England and America. The .280 Ross cartridge, according to some English catalogs of that time, had a muzzle velocity of just over 3,000 feet a second with a bullet of about 140 grains. The Ross rifle, a straight-pull bolt action, had been adopted by the Canadian government. Dr. Mann got one and we examined it, but it had some serious faults and was a dangerous gun so we got rid of it.

Mr. Butler knew I was doing a lot of work on high-velocity cartridges. When he (Continued on page 50)

Russian SMALL ARMS

(Continued from page 13)

few which did get in being captured when the revolution went sour—and reissued as police weapons, the Schwarzloses undoubtedly played a major part in establishing the caliber of Russian pistols and submachine guns.

After World War I, when the Germans found themselves unable to manufacture pistols of 9 mm. caliber and further found themselves without a satisfactory domestic market, they quite naturally sought markets abroad for their weapons, and the Mauser Model 1920 using its standard 7.63 mm. cartridge was immediately taken up by the Russians. They bought so many of this model that it became known as the Bolo Mauser, and by 1929 the British Textbook of Small Arms was able to report that the Nagant had been almost entirely superseded by its automatic rival.

The autopistol load, in a case practically identical with that of the 7.63 mm. Mauser, is an 86-grain jacketed bullet at 1,377 feet a second. H. P. White Co. lists a similar Russian load at 1,492 feet a second. A green-nosed tracer load and a black-red coded armour-piercing, incendiary load are also known, undoubtedly intended mainly for use in the several Russian submachine guns.

Even the subsequent adoption of the Tokarev 30, a small, Browning-type autoloading pistol using the 7.63 mm. Mauser cartridge, by now known as the 7.62 mm. Russian autopistol cartridge, did not, however, entirely displace the Nagant. A small production lot of Nagants in .22 rimfire was run off around 1935, and World War II saw Nagants by the careful being hauled out and issued.

As for the Tokarev 30, its career has been somewhat pathetic. It appeared on the scene just a little too late for very extensive use, and the general issue of machine pistols throughout the Soviet army has almost completely forced it aside. Soviet machine pistols, particularly of the 1941 and 1942/43 patterns, have become practically universal weapons in the Soviet Army.

The adoption of machine pistols or submachine guns into various European services is now generally considered to have

resulted from studies of the use of such weapons by Bolivian and Paraguayan forces during the South American Gran Chaco War. Adoption by Belgium and Austria in 1934 of the Bergmann and Steyr-Solothurn guns, and by Germany of the BMP34 and MP38, was certainly helped along by the demonstrated effectiveness of such arms as the Bergmann 1918, Vollmer, and Schmeisser. It would appear that Russia drew similar conclusions at the same time, since she adopted the Model 34/38, an entirely conventional little pistol carbine, caliber 7.62 mm. Russian armour piercing, with a cyclic rate (900 RPM) much too high for its 25-round box magazine.

Quite probably Russia's early experiences with this arm were not encouraging, which might explain why there were so few submachine guns available to Russian troops during the invasion of Finland. Finnish Lahti-designed Suomi pistols with their 71-round drums and low cyclic rates took a terrible Russian toll—and the Russians learned fast. As an initial step, they seem to have produced a drum magazine for the 34/38.

In 1940 they brought out the PPD (Degtyarov), a simplified but still conventional machine pistol with a large-capacity drum. It was shortly superseded by the PPSH (Shpaghin) 1941, which was not conventional. The upper and lower halves of the pressed-metal receiver of this arm are hinged together in front of the magazine well; release of a catch at the rear of the receiver makes it possible to tip up the rear of the upper half, making all the working parts and the barrel instantly accessible for cleaning.

Late-pattern 1941s—and PPSH guns are known to have been in production as recently as 1950—have been strengthened around the magazine slot but otherwise appear unchanged. The original 71-round drum has been retained, a 35-round special box magazine which came out late in World War II is still in service, and the arm is as cheap and as deadly as ever.

A similar weapon was brought out in 1942 as the PPS (Sudarev). Closely resembling the PPSH in action, it lacked the cocking handle slide safety of the PPD and PPSH, had an added pistol grip, and substituted a folding stock for the wooden fixed stock on the earlier guns. It used a 35-round box magazine. Originally the PPS receiver and barrel guard were made in two pieces and assembled and the long folding buttstock saddled its shoulder-piece around the ejection port when folded, the gun weighing 7¼ pounds. However, in 1943 a redesigned PPS appeared with a one-piece barrel guard and receiver and a shortened folding stock, its weight being reduced to about 6½ pounds. This arm has not been reported from Korea. Extensively issued to Guards battalions, which were mostly converted airborne units, during World War II, the arm is now seen in parades of airborne infantry in Moscow.

Although these arms are all extremely simple blowback-operated weapons, they represent perhaps the deadliest sort of light infantry armament. Properly issued and used in association with rifle-caliber and heavier weapons, the machine-pistol is uniquely fitted for its job.

Although the Russians experimented with and issued two versions of their 12.7 mm. anti-tank rifle, a bolt-action weapon patterned after



Pfc Howard Jameson, USA, examines a PTRS 1941 anti-tank rifle which was captured with 1910 Maxim machine gun in Korea last year (U.S. Army photo)

the German T-Gun of World War I, they dropped it as ineffective in 1939. Available both as a single-shot and as a box-magazine repeater, fitted with bipod and muzzle brake, this arm represented one solution to the problem of the one-man anti-tank weapon. The Poles brought out their Mareszek (or Maseczek?) super-high-velocity 7.92 mm. rifle, the Germans developed the PzB38, PzB39, and M-SS-41; along the same general projectile theory, the British came up with the .55 Boys—and the Russians dropped their gun.

In 1941 they came out with two weapons firing the remarkably effective 14.5 mm. Russian anti-tank rifle cartridge. One of these weapons, the PTRS1941, designed by Simonov, is nothing more than a scaled-up version of the Tokarev rifle. Its 44 pounds was considered too much of a load for one man, so removal of one key permits the gunner and loader to break the gun into two sections for transport.

The other gun, the PTRD1941, Degtyarov designed, is a thoroughly remarkable arm. Outwardly it appears to be no more than an extremely massive bolt-action mechanism fitted with a long barrel and a buffered stock. When the arm is fired, the entire gun except for the rear of the buttstock recoils. Fitted to the non-recoiling section is a fixed cam which intercepts the bolt handle. As the recoiling parts move to the rear, the cam forces the bolt handle and bolt to the unlocked position. If, as is urgently recommended, the gunner has used only clean and lightly greased ammunition, the bolt then slides fully open, completing extraction and ejection of the cartridge case.

Both of the 1941 anti-tank rifles have appeared in Korea. They created quite a stir in the newspapers—mystery weapons and all that—but it would appear that their use was not profitable enough to the North Koreans. At any rate, they are not longer reported in extensive use.

The trend in Soviet service, in anti-tank weapons for the individual soldier and squad, has been almost entirely the reverse of the trends noted in other countries. The Red Army had a heavy shaped-charged anti-tank grenade but adopted the anti-tank rifles of 1941 firing armour-piercing projectiles. In contrast, the British went from their .55 Boys rifle to the Piat projector. The Germans discarded, to a material extent, their PzB 38 and 39 and M-SS-41 anti-tank rifles in favor of the 8.8-cm RkPzB 43 and 54 and the Panzerfaust 30 and 60, even converting many of the PzB39 rifles to fire grenades. We dropped our reliance on the .50 caliber machine gun as an anti-tank weapon and turned to shaped-charge rifle grenades and the bazookas.

Ammunition for the unsuccessful anti-tank rifles dropped in 1939 gave ballistics practically identical to those of the heavy machine gun cartridge. The 12.7 mm. anti-tank load delivers a projectile weighing 801 grains at a muzzle velocity of 2,821 feet a second.

The 14.5 mm. anti-tank rifles of 1941 used a much more potent load. The basic load for this arm was a 963-grain 14.5 mm. steel-cored bullet with incendiary composition between the jacket nose and core. A load of 471 grains of powder gave it an estimate muzzle velocity of 3,200 feet a second. Another load, believed to have a carbide core, put 487 grains of powder behind a 991-grain projectile to give it 3,280 feet a second muzzle velocity. (This also included an incendiary composition in the bullet nose.) The cartridge case was a large, rimless, and sharply bottlenecked affair.

In general, Russian development of weapons for the individual soldier has reflected an extremely realistic state of mind on the part of Russian (Czarist and Soviet) arms designers and military technical authorities. The PPSH 1941 and the PPS 1942 and 43 represent something rather close to the ultimate in small arms simplicity. The Degtyarovs, both the older patterns and the more recent 'modernizations', are light



Tokarev 1930 pistol in 7.62 mm. caliber is short recoil operated Browning type with eight-round magazine. It measures 7 1/4 inches overall

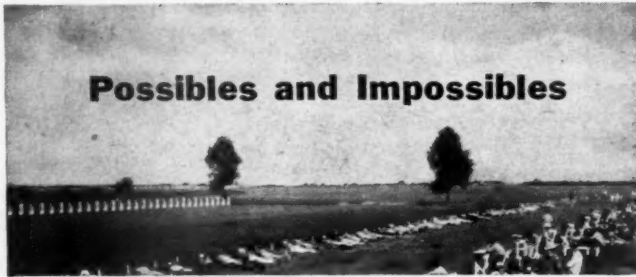
machine guns of the highest possible grade. (It might be noted, merely in passing that the present Soviet medium machine gun—the 1943 Goryunov—is very possibly the best thing of its kind in service today.)

It is hard to try to evaluate satisfactorily the Moisin-Nagant series of rifles. Any brief description of them must necessarily first take note of the fact that they are clumsy, not particularly easy to handle, accurate only to the extent required of a general-service rifle around the turn of the century and, at first glance, generally inferior. Then you come up solidly against the fact that these rifles have been in service without major modification for sixty years. They have outlasted two semi-automatic rifles. They have seen service in climates from those of the deserts of central Asia to those of the 'regions of eternal frost'. So take the gun for what it is—no beauty-contest winner, but a weapon which has proved its worth many times, a rifle which has won and kept a place in the service of a country which has frequently demonstrated a willingness to drop any weapon which doesn't measure up.

As for marksmanship within the Soviet Union, the activity of Osoaviakhim—part of which is now known as Dosav—in training Soviet citizens in the use of small arms is well known, and the abilities of the marksmen who went into service from the "Soviet Union of Hunters" were amply demonstrated to—and on—the Nazis and their allies.

Organized in 1927, Osoaviakhim counted twenty million members in 1939, almost thirty percent of whom were women. The record of the accomplishments of the organization is remarkable, showing of what value trained civilian riflemen may be to a nation in time of war. During World War II Osoaviakhim was ordered to form a mass of trained reserves for the army, navy, and air force. Several million Russians received instruction in auto and anti-tank weapons. The organization also formed a corps of defense wardens, contributing 15,000 active members to cadres of partisan detachments. Stalin, in outlining the function of Osoaviakhim during World War II, said in 1941: "In territories occupied by the enemy we must organize units of sharpshooters on horseback and afoot, as well as groups of partisans, to fight the enemy units, to take up guerilla warfare everywhere, to blow up bridges and roads, to cut telegraph and telephone wires, to burn woods, supply depots and foodstuffs." Members of Osoaviakhim formed the guerilla units which harassed Germans during their invasion of Russia.

The Soviets have taken a realistic approach to the matter of weapons and their use. Government sponsorship—and that word, too, has a special meaning in the Soviet Union—of Osoaviakhim, Dosav, Ohkot Soyuz, and other civil defense organizations makes our own national record look very sad indeed.



Possibles and Impossibles

Just recently we returned from a tour which took in the Pacific coast, the inter-mountain area and Texas. It was a wonderful opportunity to see and talk with many of our old friends—and we made the most of it.

Our first stop was at the Los Angeles Rifle and Revolver Club, where we attended the Pacific Coast Small Bore Championship Matches. This club can really be proud of its modern, 112-point range.

From there we went on to San Francisco and took advantage of the opportunity to look over the ranges to be used in the National Rifle and Pistol Matches this Fall. Now that we've seen these fine ranges we can hardly wait until the important day when the range officer gives his first command to "Commence Firing."

Portland, Oregon, was our next stop. There were no matches scheduled while we were there, so we spent some time looking over their new indoor range. Every member of this club deserves credit for the personal efforts expended in making the range and lounging rooms second to none.

Not to be outdone by their neighbors in Portland, Seattle and Spokane have new outdoor ranges under construction. When these ranges are completed they will be as fine as any in the United States. Both clubs already have the "Welcome" mat out. As they put it: It won't make any difference what kind of rifle the shooter has—there'll be a place for him to shoot.

In Montana, we visited many fine ranges, both indoor and outdoor—and made a special stop at the splendid Anaconda layout which will once again be host at the Regional. Even in Mon-

tana, with its vast, open territory, shooters like the sport of organized matches. Any shooter who enters a match in Montana will soon find that he's up to his ears in tough competition.

Our next stops were at Denver and Lafayette. Denver shooters will soon have a new range. It was under construction when we arrived. Lafayette will be the scene of the Regional this year. After looking over the range we feel sure that shooters who plan on attending the Regional will find things to their liking.

Last stop, Dallas — for the Southwestern. It was nice to visit the home town again, but after ten years things had changed so much we had to watch our step to keep from getting lost.

It was a pleasant trip, and one we will remember through the years to come. It was fun to attend the shoots, and to see so many new ranges springing up. But most of all we were glad to see those old friends who have given unstintingly of their own time so that others may enjoy shooting.

A smooth-running, successful Rifle Match is generally the result of careful planning, not chance. Before your next big shoot, read the National Rifle Association's Competitions Bulletin No. 2 and learn the steps necessary in conducting a successful Rifle Match. In this bulletin you will find tips on the duties of officers, conduct on the firing line, management of the office, and how to get newspaper and radio publicity.

To obtain a free copy of this bulletin, write to Shooting Promotion Section, Remington Arms Company, Inc., Bridgeport 2, Connecticut, and ask for the "National Rifle Association's Competitions Bulletin No. 2."

"Core-Lokt" is Reg. U.S. Pat. Off. by Remington Arms Company, Inc., Bridgeport 2, Conn.

**JULY RIFLE RANGES
VENISON**

**HUNTERS' CORNER
Texan Fires Once,
Bags Half-Ton Elk**

Abilene, Texas, July, 1951—Bob Rankin of the A-Bar Ranch has two trophies after his last hunting trip. One is a half-ton bull elk; the other weighs less than half an ounce.

Rankin was riding in a forest 40 miles northeast of Jackson Hole, Wyoming, when he heard the elk bugling. Dismounting, the Texan took his Remington bolt action Rifle and crawled through tangled undergrowth until he saw the hulking animal.

Rankin fired just one shot, from a kneeling position. The big bull dropped to the ground,



Rancher Rankin's bullet.

an instant kill under the impact of a 30-06 Remington "Core-Lokt" bullet.

Examining his prize, Rankin found that the



Texas rancher Bob Rankin stands by 1000-pound elk he shot in Wyoming. The bullet had entered at the tip of shoulder and neck had emerged just under hide. That mushroomed tip is the rancher's second trophy. He writes that he is keeping it as a memento of the amazing stopping power of Remington "Core-Lokt" bullets.

AROUND OUR CLUB The Contortionist



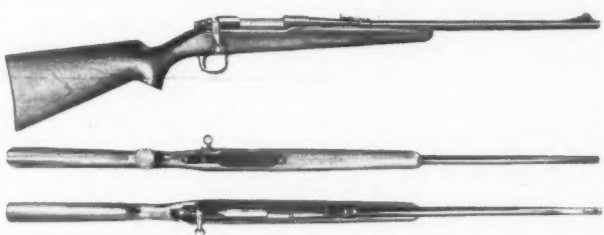
RACTICE HELPS PUT ON THE TABLE IN NOVEMBER

HOW THE S.A.A.M.I. MAKES HUNTING SAFER

New York, N. Y., July, 1951
An eight-year-long blizzard of safety posters has helped the rate of serious hunting accidents in six leading big game hunting states 50 per cent! And that's only the beginning, say members of the Sporting Arms and Ammunition Manufacturer's Institute, the organization responsible for the safety campaign. The Institute really started to tackle the accident problem earnestly during World War II. It was a time when service and heightened civilian interest were swelling our hunting population. Everyone thought the accident rate would increase with the number of hunters. But it didn't. From 7,646,193 licensed hunters in 1940, the number dropped to 12,758,698 by 1949. At the same time, in the six principal big game hunting states, the percentage of hunters having serious accidents was cut in half! During these years, the Institute distributed a million posters and 35 million pamphlets on safety.

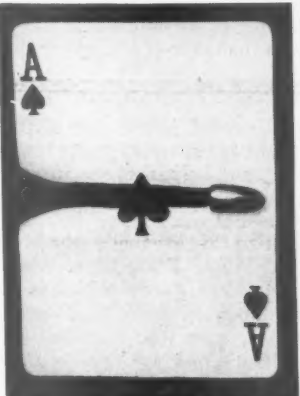
Youth Program

Another important part of the Institute's work is directed toward youth. Over two million instruction booklets have been sent to beginning shooters. To encourage these youngsters the S.A.A.M.I. planned the N.R.A. "Ranger" program. Shooting instructions, targets and hard-hitting safety pamphlets are given to anyone who registers for them. For experienced marksmen and instructors, the Institute has other booklets. If you're interested in any of them write: Sportsmen's Service Bureau, Dept. SSB, Sporting Arms and Ammunition Manufacturer's Institute, 343 Lexington Ave., New York 16, N. Y.



Gracefully streamlined, the Remington Models 721 and 722 come to a fast, natural point with either standard sights or scope. Model 721 is made in 30-06 Spfld., 270 Win., 300 Mag. calibers; Model 722 in 300 Sav., 257 Roberts, and the new 222 Remington for varmint shooting.

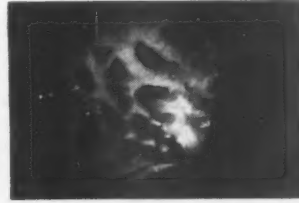
CAMERA STOPS BULLET



Above, a special camera catches a Remington 22 bullet in the act of proving its ace-high accuracy. The photographs on the right were taken to study the reaction of bullets in objects of different density. This constant ballistics research and testing insures that you get the smashing power, lightning speed and hairline accuracy you want when you buy Remington Ammunition.



Grapefruit splatters after hit.



Potato forms neat pattern.



Skull

BEST CURE FOR BUCK FEVER IS PRE-SEASON SHOOTING

Bridgeport, Conn., July, 1951
—There are two schools of deer hunters—those who walk through the woods and those who come home with a buck.

The first noticeable difference appears this time of year. The rifle of the "woods-walker" is either gathering dust or being put through some sort of brief routine that doesn't pay off in venison... like taking a few half-hearted shots at a tomato can 50 feet away. Then the rifle is returned to its case until Fall with the feeling that, after all, a buck is bigger than a tomato can.

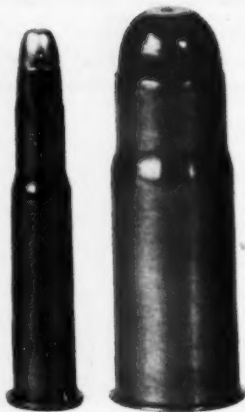
It's not until he sees a buck that other differences become apparent. The buck is bigger. It's also farther away, and moving fast. Summer's care-free bravado gives way to a fairly common Fall malady—buck fever! Palms sweat, hands tremble and a trophy runs into cover.

The Happy Side

But there is another kind of hunter. You'll find him on the range now—sighting in his rifle, practicing different positions, sharpening his distance estimations.

It wouldn't be surprising to see him with a new Remington Model 721 or 722 in his hands. He'd buy a rifle like that because he knows a hunter needs everything in his favor to make that all-important shot count. He would want one that handles easily, has a smooth trigger pull and could be depended on under all hunting conditions.

By Fall the only thing this hunter needs is one decent shot. He'll make it. And there'll be venison on the table!



Winchester .70-150 (right) compared with a .30-30 cartridge



MISTER X—the great mysterious one! That's the enigmatical .70-150 caliber Winchester.

Subjects come few and very far between in this day that we can not find some source from which to gain the desired information. Usually, the most puzzling are those not of the tangible variety—those which we can not touch or get our hands on. Not true, in the case of the .70 caliber Winchester cartridge. Although not in great quantity, the big bore is very much present among us—in a few prized collections scattered over the country.

Since the day, several years ago, that a .70-150 cartridge found its place in my collection case, I have searched far and wide for some definite history on the over-grown number. My inquiries have reached all best-known authorities on firearms and their loads in the United States as well as, through international publications, arm experts in foreign countries.

The manufacturers of "Mister X" have no records which can supply positive information as to its whys and wherefores. A letter from Merton A. Robinson, Ballistic Engineer at the Winchester Repeating Arms Company, states that the identity of their .70 caliber cartridge has been a subject for discussion

at New Haven for some time. Makers of the cartridge advance the theory that it was simply a display item for exhibitions held during the latter part of the 19th century. Nothing definite, however.

Mr. B. D. Munhall, of the H. P. White Company, Ohio, who has the well-known reputation of being capable of giving the most authoritative answers to questions regarding cartridge history, says the big Winchester touches on a dispute of long standing among cartridge collectors. He, like Winchester's Robinson, is inclined to believe the cartridge, and rifle chambering it—a Winchester Model 1876, was manufactured for display purposes only. Again, nothing definite.

Be it far from me to oppose the opinions of those who have had the opportunity to be more familiar with some phases of the arms and ammunition game than I, but all the purely display cartridges I have seen were not loaded. The .70-150 specimen in my collection is *fully loaded and primed*. That fact, alone, leads me to believe that this number was turned out for shooting purposes. The huge lead bullet has a copper shell inserted in its nose—a common feature in bullets of other calibers in the '70's. The big, bottlenecked brass case has a very thin shot-gun shell type rim around its base, and the primer is relatively small.

The well-known Texas cartridge and arms collector, and authority on these items, the late Carl Metzger of Dallas, told me one afternoon when he was visiting me that he had reason to believe that the Winchester '76 chambered for the .70-150 was made for exportation to England, where the British were to try it on African big game. That sounds feasible.

It would not be totally out of order for the Centennial, or model 1876, Winchester to have been manufactured to take the .70 caliber, as the '76 was popularly chambered for large caliber loads such as the .45-70, .45-75, and .50-95. A repeating rifle bored to 70/100's of an inch certainly would give the hunter plenty of firepower for Africa's roughest and toughest targets—especially, when the bullet weighs between 700 and 900 grains backed by 150 grains of black powder!

There is a darn good chance that the far-reaching AMERICAN RIFLEMAN will find its pages thumbed through to this very spot in the column by an owner of a .70-150 Winchester rifle; and who would, no doubt, have some extremely valuable information on the rare piece. It should not be difficult to recognize, as the bore would measure just a fraction of an inch smaller than that of a 12-gauge shot gun!—ADAM WILSON III.

Some Wildcats of Long Ago

(Continued from page 45)

heard about the Hamburg rifle, he invited me to bring the rifle up to the company's plant at Lowell, Massachusetts and test it for velocity to see if it would beat the .280 Ross. Late in December of 1912 I went up to the United States Cartridge Company plant with the Hamburg rifle. I knew I was getting high velocity and accuracy with the .25 Krag cartridge, and I was sure I could beat the Ross cartridge. James Burns, who later developed the non-corrosive primer, was present when we tested the Hamburg rifle on the chronograph. The velocity recordings kept climbing up from 2,800 feet a second and someone sent word down to the office for Mr. Butler to come see what was going on. He came and looked at the velocity on the chart—3,330 feet a second—and then asked, "You've got high velocity all right, but have you got accuracy?"

I had a postage stamp on a piece of paper put up at 70 yards and, using a large packing case for a rest, fired five shots that were all in or cutting the stamp. After looking at the group, Mr. Butler put his hand on my shoulder and told me I had a good cartridge. He said if there was any-

thing I needed in the way of powder, cases, or bullets from the plant to use in my work, just to ask for it. He was always friendly and helpful to me after that.

After I had built the Hamburg rifle Dr. Mann wanted one like it. But after I had finished a rifle I could always find something I'd have made a little different if I had it to do over again. When I started to make a Hamburg rifle for Dr. Mann in 1913, I decided to redesign the bolt. I made the new bolt with seven heavy threads instead of two large locking lugs. We called it a 'screw-bolt' or improved Hamburg action. Dr. Mann's rifle was chambered for the .25 Krag cartridge. I made a dozen of these screw-bolt actions all together.

The men working with wildcat cartridges today have it a little easier than we did forty years ago, and they are getting some wonderful results in accuracy and velocity. There are far better primers, powders, and bullets on the market today. There's better barrel steel available, too. We had to do the best we could with what we had then and, all things considered, I think we did pretty well at that. ♦ ♦ ♦

For assistance in compiling material and photographs for this article, we are grateful to Moris G. Van Way, R. S. Hill, Darrell Muething, Homer E. Reid and Bob Brant.

THE SPOTTING SCOPE --

July 1951

What must be one of the oldest summer camps in the country to sponsor a rifle shooting program is Camp Wigwam of Harrison, Maine. Arnold M. Lehman recently wrote NRA requesting a copy of the charter. Neither the NRA nor Lehman was able to ascertain the date the camp affiliated with the NRA, but Mr. Lehman supplied a letter, dated June 26, 1926, from the NRA commenting on the continuation of the rifle program. Wigwam first opened in 1910 and Lehman believes rifle shooting has been a camp activity since 1913 . . . Brig. General William Whaling, USMC, is the new assistant division commander of the 1st Marine Division in Korea. Bill Whaling is a well-known pistol shooter and was Executive Officer of the Camp Perry Matches in 1947 . . . Dow Smith, Midwestern NRA field representative for the last few years, is now a member of the headquarters staff in Washington, D. C. . . . The California Highway Patrol has opened a new school for its men. Pistol practice and instruction, including competitive shooting, is an important part of the curricula . . . Franklin W. Olin, 91, organizer of Olin Industries and dean of the nation's sporting arms and ammunition industry, died in May in St. Louis, Missouri . . . Under a new bill recently signed by Governor Walter Kohler of Wisconsin, all hunting accidents caused by gunfire or bow and arrow have to be reported to the state conservation commission within ten days. If all states required this type of reporting, many mishaps now credited as hunting accidents would show up as heart failure and the like. Leading citizens of India are in the process of organizing a national rifle association patterned after our own organization. Top government officials and top ranking military men recently met under the presidency of Shri G. V. Mavalanker, Speaker of the Indian Parliament, to set up the machinery. The first India National Rifle and Pistol Championships are tentatively set for January, 1952.

Over 18,000 NRA Handbooks on hunting, reloading, shooting, etc., have been sold since they were first introduced last year. The Handbooks are compilations of articles that have appeared in the AMERICAN RIFLEMAN . . . The Massachusetts Institute of Technology rifle team, 1951 intercollegiate champions, compiled an almost unbelievable record during the college competitive season. In 17 intercollegiate tournaments they met 35 schools, losing only once to Maryland and broke the range records at West Point, Coast Guard Academy, New Hampshire, Duquesne, Pittsburgh, Rutgers, New York University, St. John's of Brooklyn, Fordham and of course their own range. The team was coached by John K. Brahe.

Ralph Kline, of San Francisco, California, was the first 1951 winner of a pistol regional championship. He took the South Pacific States championship at Bakersfield, California, with 2573 points out of a possible 2700 . . . When Elinor Bell won the Far Southwestern Smallbore Regional this year at Phoenix, Arizona, with a score of 3176 out of a possible 3200 points, she became the third woman ever to win a regional crown. Mrs. Octavia B. Waddell, of Medford, Oregon, won the 1941 Pacific Northwest smallbore tournament, with 3177, and Audrey Richard of Florida took the Southeastern title in 1947 with 3165 . . . Clair Taylor of Pennsylvania set a new record at the 4th Annual Memorial Weekend Bench Rest shoot at Dubois, Pennsylvania, held on June 2 and 3. He fired a 10-shot group at 300 meters which measured 1.755 inches. The old mark was 1.9086 inches set by Al Hoyer of Pennsylvania last year at the same match . . . "The Ultimate in Rifle Shooting," the 1951 Bench Rest Shooters' Annual, edited by Colonel Townsend Whelen, is the best yet. According to Major General Julian Hatcher, NRA Technical advisor, it contains 372 pages crammed with real information for anyone who wants to know how well a rifle can shoot . . . Competitive target shooters, gun collectors, experimenters, wildcatters and hunters cannot afford to miss the panel discussions and clinics planned for them at the 3rd NRA Convention. Plan to be in San Francisco from October 6 to 12 to join the sessions.

Paul Cardinal

National Smallbore, Pistol, and High Power Championship Plans Reviewed

Plans are nearing completion for the 1951 National smallbore, pistol and high power championship matches. Programs and entry cards for the National Championship matches are being given all competitors at the respective 1951 Regionals. It is required that entry cards be used for making entry in either of the Nationals.

The NRA will operate a Housing Bureau in San Francisco to assist competitors in the smallbore and pistol Nationals as well as members attending the convention with their reservations. Information about housing in the San Francisco area during the National matches and convention may be obtained by writing the NRA Convention Secretary, 1600 Rhode Island Avenue, N.W., Washington 6, D. C.

Official word has been received that the National Individual Matches will be authorized by the Department of the Army.

A brief outline of all three National championship matches to include the complete firing schedule of the High Power Nationals is published below:

SMALLBORE CHAMPIONSHIP

Location: Sharp Park Municipal Range, San Francisco, California.

Dates: Section 1, National Sharpshooter Championship, and Section 2, National Marksman Championship, will be fired concurrently on Wednesday and Thursday, October 3 and 4. Section 3, National Open Championship (open to Masters and Experts plus high 10 percent in Sections 1 and 2), will be fired on October 5 and 6.

Conducting Organization: The Nationals are being conducted by the combined California State Rifle and Pistol Association and the San Francisco Rifle Association.

Eligibility: All Regional aggregate competitors may enter the Nationals by completing the entry card given them at the Regional tournament. A competitor's classification on the date of his National championship will determine eligibility for the sharpshooter, marksman, or open championship tournament.

Entry Closing Date: August 20.

Entry Acknowledgment: Entries will be accepted up to full capacity of the range (250 Sharpshooters and Marksmen combined and 250 in the Open). All entries will be acknowledged by mail as early as possible.

Post Entries: If less than 250 competitors enter in either section, Post Entries will be accepted from Regional Championship competitors in the order they are received at the Tournament Statistical Office.

PISTOL CHAMPIONSHIPS

Location: San Francisco, California, Police Pistol Club.

Dates: Section 1, National Sharpshooter Championship, and Section 2, National Marksman Championship, will be fired concurrently on Saturday, Sunday and Monday, September 29, 30 and October 1. Section 3, National Open Championship (open to Masters and Experts plus high 10 percent in Sections 1 and 2), will be fired on Wednes-

day, Thursday, and Friday, October 3, 4, and 5. National Individual and Team Matches will be fired on October 2.

Conducting Organization: San Francisco Police Pistol Club.

Eligibility: All regional aggregate competitors may enter the Nationals by completing the entry card given them at the Regional tournament. A competitor's classification on the date of his National championship will determine eligibility for the sharpshooter, marksman, or open championship tournament.

Entry Closing Date: August 27.

Entry Acknowledgment: Entries will be accepted up to full capacity of the range (360 Sharpshooters and Marksmen combined, and 360 in the Open). All entries will be acknowledged by mail as early as possible.

Post Entries: If less than 360 competitors enter in either section, Post Entries will be accepted from Regional Championship competitors in the order they are received at the Tournament Statistical Office.

Distinguished Medals

High-power rifle and pistol shooters will again have the opportunity to shoot for 'legs' on the coveted Distinguished Marksman and Distinguished Pistol Shot Medals presented by the Adjutant General, U. S. Army in the National Individual and Team Pistol Matches which will be fired October 2 at San Francisco Police Pistol Range and in the National Individual Rifle Match which will be fired September 30, Camp Mathews, California.

HIGH POWER CHAMPIONSHIPS

Location: Camp Mathews, California.

Dates: NRA High Power Rifle Championships—September 27 to 29, inclusive. National Individual—September 30.

Conducting Organization: The range, housing, and messing facilities, and the operating personnel will be furnished by the U. S. Marine Corps. Open to all NRA members (to range capacity). Competition in high power rifle regionals is not required for eligibility in 1951 National High Power Championship Matches. Entry will be made on the official entry card which will be given to all high power regional competitors and will be available on request from NRA Washington office on July 1.

Housing: Quarters for competitors will be available at Camp Mathews for which a nominal charge will be made. Blankets, linen, etc., will be furnished. Competitors will be charged for laundry of items used. Motels are available for those who wish family quarters.

Mess: A competitors' mess will be operated beginning with the evening meal of September 26.

Arms: Types to be used.

Service Rifle: The United States rifle, caliber .30, Model M1, as issued, with not less than 4-1/2-pound trigger pull.

NRA Match Rifle: A rifle weighing not over 10 pounds excluding sling, with not less than a 3-pound trigger pull, chambered for the .30-'06 cartridge, metallic sights. (This will include the Enfield and Springfield rifles, as issued.)

Special Target Rifle: A center-fire rifle of any caliber or weight, any sights, not equipped with palm rest, Schuetzen-type buttplate or set triggers.

Free Rifle: Described in the International Shooting Union Rules as follows: Caliber not to exceed 9 mm. (.354 inches); weight not over 19.8 pounds, including all accessories; sights, metallic; sling not over 1.6 inches wide; may include palm rest and prong type buttplate.

Arms for Issue: M1 rifles will be available for issue. Rifles issued by the DCM to affiliated NRA clubs may be used in service rifle events.

Ammunition: M2, .30 caliber ammunition will be available for issue. Any ammunition may be used in NRA matches.

Targets: Military-type except in Free Rifle Match, in which the International 300-meter target will be used.

JOHN D. PEDERSEN

Word has just been received of the sudden death of John D. Pedersen on May 23, 1951 at Sedona, Arizona where he was stricken with coronary thrombosis while on a vacation.

Mr. Pedersen was an arms designer with a great and well deserved reputation. He was the inventor of the Remington Model 1010 Repeating Shotgun; the Remington Slide Action .22 Repeating Rifle, Model 12; the Remington Slide Action High Power Repeating Rifles, Model 14; and the Remington Automatic Pistols, Model 51, as well as of the top-secret Pedersen Device of World War I. This was an automatic bolt for the Springfield rifle, which would convert the Springfield instantly to a 40-shot semiautomatic repeater. It was designed to use a caliber .30 pistol-type cartridge fed from 40-shot magazines.

In 1927 the government hired Mr. Pedersen as a design engineer for the specific purpose of producing a semiautomatic rifle for the Army. Mr. Pedersen originated a rifle and a cartridge to match, both of 7 mm. or .276 caliber, and this rifle went through very successful tests and was finally recommended for adoption by the Army and was well on its way for final approval when a decision of the Chief of Staff of those days, General Douglas MacArthur, required the Army to retain the .30 caliber cartridge as standard.

During recent years Mr. Pedersen has been living more or less in retirement at Blandford, Mass. His death marks the passing of a truly great arms designing engineer.

SUMMER CAMP MATCHES

Summer camps throughout the country are now entering the annual summer camp matches. The youngsters are given an opportunity to shoot in both individual and team matches for boys and girls. Matches

are arranged for two age groups; seniors, from 14 to 19 and juniors, under 14.

Sets of serially numbered targets are mailed each camp from the NRA Washington office. Scores are fired in each camp and then the fired targets are returned to the NRA for scoring and ranking. A final bulletin is published and awards are issued at the end of the season.

The 1950 summer camp matches were enjoyed by 452 boys and girls who represented 700 NRA affiliated summer camps.

1952 TOURNAMENTS

The 1952 tournament dates are being publicized so that interested organizations may make plans for next year:

Junior Postals (Final of four monthly matches)	February 29
Intercollegiate Sectional (Shoulder to shoulder match)	March 22
Intercollegiate Postal (Closing date)	March 15
NROTC Postal (Closing date)	April 30
Junior Sectional (Shoulder to shoulder)	April 26
National Guard Postal	April 30
Summer Camp Postal (Closing date)	August 31

NATIONAL LEAGUE WINNERS

Frazier Simplex #1 team of the Pittsburgh and Suburban Rifle League won the National Gallery League Team Championship with a score of 1551. Terrapin Team #1 of the Maryland Rifle League also fired a 1551 score but lost in the tie breaking when their total standing score was one point below that of Frazier Simplex. The Rifle Range Pistol Team of the Marine Corps Schools (Quantico, Virginia) Pistol League won the National Pistol Team Championship with the score of 1130.



COMING EVENTS

Tournaments and other important events listed below include all National, Regional and State Championships that have been registered with the NRA. The current Rifle and Pistol Registered Tournament Schedule (available on request) lists all registered tournaments that were reported to NRA Headquarters by March 15, 1951. Only state championships are listed in this column after the publication of the seasonal schedule.

Tournaments requiring advance entries are indicated by (Adv.). Tournaments limiting the number of entries that can be accepted are indicated by (Ltd.).

OCTOBER

6-12, 1951—Third Annual NRA Convention at San Francisco, California.

NATIONAL CHAMPIONSHIPS

SEPTEMBER

27-30—High Power Rifle at Camp Mathews, California. Programs available from NRA.

29-Oct. 6, 1951—Pistol and Revolver at Police Department Range, San Francisco, California. Programs available from NRA.

OCTOBER

3-6, 1951—Smallbore Rifle at San Francisco, California. Programs available from NRA.

1951 REGIONAL SMALLBORE

JULY

7-8 ANACONDA, MONTANA—Northwestern Regional Smallbore Rifle Championship. Mr. Fred J. Mesenko, 700 Oak Street, Anacosta, Montana.

14-15 MIDDLEFIELD, CONNECTICUT—Northeastern Regional Smallbore Rifle Championship. Mr. J. Russell Lent, Middlefield, Connecticut.

21-22 SAN FRANCISCO, CALIFORNIA—South Pacific States Regional Smallbore Rifle Championship. Dr. Chas. J. Parshall, 530 Fulton Street, San Francisco, California.

JULY, NINETEEN FIFTY-ONE

AUGUST

4-5 BALTIMORE, MARYLAND—Middle Atlantic States Regional Smallbore Rifle Championship. Mr. Joseph N. Schlick, 605 Radnor Avenue, Baltimore 12, Maryland.

4-5 KNOXVILLE, TENNESSEE—Southeastern Regional Smallbore Rifle Championship. Mr. A. W. Nine, 104 Underwood Place, Knoxville, Tennessee.

4-5 BRISTOL, INDIANA—North Central Regional Smallbore Rifle Championship. Mrs. Garnette R. Horner, 1115 North Huey Street, South Bend, Indiana.

4-5 LAFAYETTE, COLORADO—Rocky Mountain Regional Smallbore Rifle Championship. Mr. E. L. Mathes, 4855 Irving Street, Denver, Colorado.

11-12 SEATTLE, WASHINGTON—North Pacific States Regional Smallbore Rifle Championship. Mr. C. M. Styer, 3447 41st Avenue, S. W., Seattle, Washington.

1951 REGIONAL PISTOL

JULY

6-7-8 HARRISBURG, PENNSYLVANIA—Middle Atlantic States Regional Pistol Championship. Mr. F. H. Wells, 3800 Hillcrest Road, Harrisburg, Pennsylvania.

14-15 POUGHKEEPSIE, NEW YORK—Northeastern Regional Pistol Championship. Mrs. Martha W. Strahan, 30 Arnold Boulevard, Poughkeepsie, New York.

21-22 DENVER, COLORADO—Rocky Mountain Regional Pistol Championship. Mr. Oscar R. Mains, 2432 W. Argyle Place, Denver, Colorado.

AUGUST

3-4-5 LOS ALAMOS, NEW MEXICO—Far Southwestern Regional Pistol Championship. Mr. George R. Irwin, Atomic Energy Protective Force, Los Alamos, New Mexico.

10-11-12 ST. LOUIS, MISSOURI—Midwestern Regional Pistol Championship. Mr. Frank Stubbs, 5507 Lisett Avenue, St. Louis 9, Missouri.

11-12 BOISE, IDAHO—Northwestern Regional Pistol Championship. Mrs. Emily Davidson, Route 3, Boise, Idaho.

17-18-19 JACKSONVILLE, FLORIDA—Southeastern Regional Pistol Championship. Mr. C. A. Brown, Jacksonville Police Department, Jacksonville, Florida.

17-18-19 RAYMOND, WASHINGTON—North Pacific States Regional Pistol Championship. Mr. Malcolm B. Edwards, P. O. Box 252, South Bend, Washington.

18-19 BRIGHTON, MICHIGAN—North Central Regional Pistol Championship. Mr. Charles H. Drew, 12345 9 Mile Road, South Lyon, Michigan.

1951 REGIONAL HIGH POWER

JULY

21-22 MIDDLEFIELD, CONNECTICUT—J. R. Lent, Lyman Gunsight Corporation, Middlefield, Connecticut.

29 or August 12 CAMP CARSON, COLORADO—Sponsored by State Association. Mr. John M. Schooley, 540 Utica, Denver, Colorado.

AUGUST

18-19 HELENA, MONTANA—Mr. George Gilbertson, 1042 Taylor Street, Missoula, Montana.

18-19 FORT DOUGLAS, UTAH—Mr. Ralph K. Walker, 877 North Maine, Nephi, Utah.

18-19 FORT SHERIDAN, ILLINOIS—Mr. Harold Williamson, 1922 W. Norwood Street, Chicago, Illinois.

25-26 TUCSON, ARIZONA—Mr. Don Amesbury, 4065 Montacito Street, Tucson, Arizona.

25-26 FLORIDA—High Power Rifle Regional at Winter Haven, Florida. Mr. George Bassett, P. O. Box 576, Winter Haven, Florida.

25-26-27 CAMP PERRY, OHIO—Mr. Ray T. Bayless, 3651 Trayham Road, Shaker Heights, Cleveland, Ohio.

SEPTEMBER

1-2-3 CAMP HUNTER LIGGETT, CALIFORNIA—Mr. D. W. Jackson, Jr., 1350 5th Avenue, San Francisco, California.

1-2-3 PORTLAND, OREGON—Mr. R. L. Kirk, 3816 S. E. 33rd Avenue, Portland, Oregon.

9 CAMP RIPLEY, MINNESOTA—Mr. B. K. Soby, Fergus Falls, Minnesota.

STATE CHAMPIONSHIP TOURNAMENTS

JULY

1 ALABAMA—Alabama State Pistol Championship at Gunterville Dam, Alabama. Mr. Charles C. Jones, 609 South 19th Avenue, Birmingham, Alabama.

7-8 INDIANA—4th Annual Indiana State Pistol Championship Tournament at Bristol, Indiana. Mrs. Garnette R. Horner, 1115 North Huey Street, South Bend, Indiana.

15 WISCONSIN—Wisconsin State Smallbore Championship at Sparta, Wisconsin. Earl J. Lucas, 801 N. Water Street, Sparta, Wisconsin.

14-15 WEST VIRGINIA—Mountain State Rifle Tournament at Parkersburg, West Virginia. Mr. R. A. Simpson, 212 W. 10th Street, Parkersburg, West Virginia.

15 NORTH DAKOTA—9th Annual State Pistol Match at Devils Lake, Camp Grafton, North Dakota. Mr. J. W. Aitken, Overly, North Dakota.

21-22 NEW JERSEY—13th Annual New Jersey State Pistol and Revolver Championship at South River, New Jersey. Frank Svec, Box 42, Leonia, New Jersey.

22 VIRGINIA—Virginia State Outdoor Smallbore Rifle Championship at Bowers Hill, Virginia. Mr. J. D. Belding, 38 Fiske Street, Cradock, Virginia.

21-22 CONNECTICUT—Big Bore Individual State Championship (Regional) at Middlefield, Connecticut. Mr. J. Russell Lent, Middlefield, Connecticut.

22 MAINE—State Championship Smallbore Rifle Matches at Damariscotte, Maine. M. F. Dunphy, 9 Bowdoin Place, Bangor, Maine.

28-29 MICHIGAN—Michigan State Pistol Championship Matches at Flint, Michigan. Mr. Kenneth Gilman, 1330 Begole Street, Flint, Michigan.

28-29 MONTANA—Montana State Pistol Championship at Great Falls, Montana. Dr. R. E. Englert, 1405 4th Avenue, North, Great Falls, Montana.

29 VERMONT—Vermont State Pistol and Revolver Tournament at Northfield, Vermont. Jean M. Peatman, 16 Elm Street, Montpelier, Vermont.

28-29 MICHIGAN—42nd Annual Michigan State .30 Caliber Rifle Matches at Camp Grayling, Michigan. Mr. Walter C. Franke, 432 E. Lafayette, Detroit 26, Michigan.

AUGUST

3-4-5 D. C.—United States Park Police 7th Annual Pistol Tournament at Washington, D. C. Chief M. H. Raspberry, Rm. 1215, Interior Building, Washington, D. C.

12 WISCONSIN—30 Caliber State Championship at Racine, Wisconsin. Mr. Dexter F. Rhodes, 3828 W. Sheridan Avenue, Milwaukee, Wisconsin.

18-19 UTAH—Utah State .30 Caliber Rifle (Regional) Championship at Salt Lake City, Utah. Mr. Ralph K. Walker, 877 North Main, Nephi, Utah.

19 MONTANA—Montana State .30 Caliber Championship (Regional) at Helena, Montana. Mr. George Gilbertson, 1042 Taylor Street, Missoula, Montana.

19 NEW YORK—New York State Smallbore Championship at Hicksville, Long Island, New York. Mr. Val B. Cleaver, P. O. Box 356, Hicksville, Long Island, New York.

19 MINNESOTA—Minnesota State Outdoor Pistol Championship at St. Paul, Minnesota. Mr. Cy B. Wood, 2048 N. Cleveland, St. Paul 8, Minnesota.

25-26 NEW MEXICO—New Mexico State Championship at Cimarron, New Mexico. Mr. Roy E. Triplett, Cimarron, New Mexico.

25-26-27 OHIO—Ohio State Individual and Team (Regional) Championship at Camp Perry, Ohio. Mr. Ray T. Bayless, 7301 Euclid Avenue, Cleveland 3, Ohio.

26 CONNECTICUT—14th Annual State Smallbore Rifle Championship at East Wallingford, Connecticut. Mr. J. Russell Lent, Middlefield, Connecticut.

29-30-31 & Sept. 1-2-3 OHIO—Camp Perry Championship Matches at Camp Perry, Ohio. Mr. John R. Lang, 3498 Meadow Avenue, Cincinnati 11, Ohio.

SEPTEMBER

1-2-3 OREGON—Oregon State High Power Rifle Championship at Portland, Oregon. Mr. R. L. Kirk, 3816 S. E. 33rd Avenue, Portland, Oregon.

1-2 LOUISIANA—Louisiana State Pistol Tournament at Shreveport, Louisiana. Mr. W. A. Gooch, P. O. Box 4248, Shreveport, Louisiana.

1-2-3 OHIO—Camp Perry Pistol Championship Matches at Camp Perry, Ohio. Mr. John R. Lang, 3498 Meadow Avenue, Cincinnati, Ohio.

2 KANSAS—12th Annual Sunflower State Smallbore Tournament at Topeka, Kansas. Mr. Leo J. Voelker, 423 East 10th Street, Topeka, Kansas.

2-3 MONTANA—Montana State Outdoor Smallbore Championship at Laurel, Montana. Mr. E. S. Shoemaker, 2010 8th Avenue, North, Great Falls, Montana.

2-3 WYOMING—Wyoming .30 Caliber Rifle State Championship at Worland, Wyoming. Mr. Marten Martenson, 1301 Pulliam Ave., Worland, Wyoming.

2-3 LOUISIANA—Louisiana State Smallbore Rifle Matches at New Orleans, Louisiana. Mr. Thomas Hollis, 553 Homestead Avenue, New Orleans, Louisiana.

8-9 WEST VIRGINIA—14th Annual Mountain State Pistol Tournament at Parkersburg, West Virginia. Mr. Kenneth E. Gilbert, 4 Camden Place, Parkersburg, West Virginia.

8-9 NEW MEXICO—New Mexico State Pistol Championship at Los Alamos, New Mexico. George E. Irwin, P. O. Box 538, Los Alamos, New Mexico.

9 IOWA—Iowa State .30 Caliber Tournament at Moscow, Iowa. Ruth Maurer, Wilton Junction, Iowa.

9 NEBRASKA—Nebraska State Smallbore Tournament at Grand Island, Nebraska. Mr. H. H. Buis, 1312 N. 35th Street, Omaha, Nebraska.

9 ILLINOIS—Illinois Pistol State Championship at Highland Park, Illinois. Mr. W. H. Davis, 1306 Nyoda Place, Highland Park, Illinois.

16 VERMONT—Center Fire Rifle State Championship at Northfield, Vermont. P. H. Teachout, East Burke, Vermont.

16 UTAH—Utah State Pistol Championship at Salt Lake City, Utah. Mr. Ralph K. Walker, 877 North Main, Nephi, Utah.

16 WASHINGTON—Washington State Championship Pistol Match at South Bend, Washington. Malcolm B. Edwards, P. O. Box 252, South Bend, Washington.

23 ILLINOIS—Illinois State Smallbore Rifle Championship at Libertyville, Illinois. Mrs. Betty Mason, 225 West Park Avenue, Libertyville, Illinois.

30 MASSACHUSETTS—Framingham Fall Smallbore Rifle Tournament at Framingham, Massachusetts. Mr. Kent R. Bulfinch, 13 Massasoit Avenue, South Sudbury, Massachusetts.

29-30 MICHIGAN—Outdoor State Championship Matches at Ionia, Michigan. Maurice E. Ward, 421 Jones Street, Ionia, Michigan.

CHANGES AND CANCELLATIONS

JULY

7 CALIFORNIA—Night Tournament at Fresno, California. Mr. Henry Wright, 4927 Olive, Fresno, California. (Note: This tournament has been cancelled.)

29 ILLINOIS—Western Rifle League Annual "Tourn-a-Gettogether-Ment" at Wheaton, Illinois. Mr. Byron E. Putman, 814 Ellis Avenue, Wheaton, Illinois. (Note: This is a Restricted Tournament.)

AUGUST

5 NEW YORK—Annual Central New York Smallbore Rifle Tournament at Oneida, New York. Mr. George Snover, R. D. #1, Verona, New York. (Note: Previously listed as a pistol tournament.)

11 CALIFORNIA—Night Tournament at Fresno, California. Mr. Henry Wright, 4927 Olive, Fresno, California. (Note: This tournament has been cancelled.)

11-12—IDAHO—Northwestern Regional Pistol Championship at Boise, Idaho. Mrs. Emily Davidson, Route #3, Boise, Idaho. (Note: Contact previously listed as Mr. Emily Davidson.)

23-26 NEW YORK—6th Annual Fall Pistol Tournament at Poughkeepsie, New York. Mrs. Martha W. Strahan, 30 Arnold Street, Poughkeepsie, New York. (Note: Previously scheduled for September 15-16.)

SEPTEMBER

1-2 CALIFORNIA—Southland Tuna Pistol Matches at San Diego, California. Sgt. A. B. Davis, 3044 Ingelw, San Diego, California. (Note: Previously scheduled for September 2.)

16 IOWA—Big Four Fall Rifle Tournament at Postville, Iowa. Mr. Vance Stover, Postville, Iowa. (Note: Previously scheduled for Sept. 9.)

16 PENNSYLVANIA—19th Annual Lehigh Valley Smallbore Championship at Allentown, Pennsylvania. Mr. Robert E. Opperman, Fullerton, Pennsylvania. (Note: Previously scheduled for September 30.)

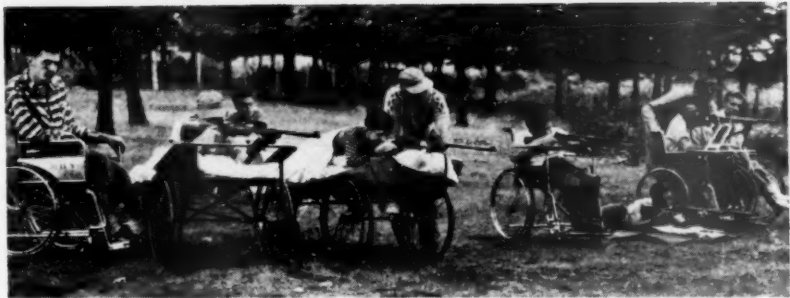
21-22-23 TEXAS—30 Caliber Second Annual Chancel Matches at Bishop, Texas. Mr. Robert W. Rasmussen, 604 Henderson, Bishop, Texas. (Note: Previously scheduled for September 7-8-9.)

HIGH-POWER COMMITTEE REQUEST

The high-power rifle committee has asked that all high-power rifle tournaments be registered with the NRA. The committee needs as many tournament bulletins as possible in order to determine the most popular courses of fire. Current high-power match bulletins are also necessary for the statistical research required to develop a classification system for this phase of competitive shooting.

ANTELOPE HUNT

The 1951 antelope season in the state of Wyoming is from September 2 to October 14. During the 1950 season 18,000 antelope hunting permits were sold to both resident and non-resident hunters. Reports indicate that over 90 percent of these hunters were successful in getting an antelope. The 1951 game census shows the range is still overstocked, so there will be 30,000 antelope per-



ON THE FIRING LINE. Patients of the Massachusetts Hospital School, Canton, Massachusetts, formed a Junior Rifle Club during the summer of 1950 with L. V. White as instructor. Members fire on an outdoor 50 foot range during the summer months and though every member is physically handicapped, methods of supporting the rifle have been adopted to fit the individual.

mits sold this fall and each hunter will be allowed two permits. The permits are sold on a first-come, first-served basis with a fee of \$5.00 each for residents and \$25.00 each for non-residents.

Campbell County in the northeastern part of the state has the largest antelope population and so 12,000 permits will be sold for this one county. Gillette is the only town in this county which measures approximately 100 miles long and 60 miles wide. The Rotary Club of Gillette is sponsoring an annual Antelope Round-Up which covers the entire 1951 season. Members of the club will instruct out-of-state hunters in the game laws and direct them to farms and ranches on which they may hunt. To add interest to the hunt the Gillette Antelope Round-Up offers four beautiful trophies to non-resident hunters: one for the largest buck, largest doe, widest spread of horns, and one for the 'average weight' antelope.

This section of Wyoming can be easily reached by automobile or train. Roads in the state are excellent and there are adequate accommodations. Hunters are required to have a high-power rifle of .23 caliber or larger which fires a cartridge of at least two inches length and contains a soft-point or other type of expanding bullet.

Successful antelope hunting requires long-range shooting skill as they can run at speeds of 45 miles an hour, have keen sight and hearing and are difficult to stalk.

Permits for this hunt may be obtained by mail from Dutch Dahlman, Gillette, Wyoming, or in person from Deputy Game Warden stationed in or adjacent to the Northeastern Hunting Area. If an application is sent by mail it should include the address of the individual making application, physical description, license fee, and a request that the permits be issued for the Northeastern Hunting Area. The non-resident fee is \$25.00 for each permit with a limit of two permits sold to each hunter.



Colt .32 Automatic #333265. Dr. E. P. Minthorn, 310 S. Boulevard, New Port Richey, Florida.
Smith & Wesson K-22 Masterpiece, K-19287. Gene Gifford, 837 W. 2nd Street, Weston, West Virginia.

.44-40 Colt Frontier #350027, 7 1/2" barrel. C. H. Shepherd, 3655 S. Commercial, Salem, Oregon.
Remington 513T, #12647. Miss Nancy Worthington, Camp Alleghany, West Virginia, or B-11 Lexington Apts, Lynchburg, Virginia.

Field Glasses, #68875. Light tan. "DK" on right side. Bee Sport Shop, 13 W. Forest, Brigham City, Utah.

SPARROWS POINT PISTOL MATCH

L. M. Rizzola of Washington, D. C., won the grand aggregate of the 12th Annual Maryland State Revolver and Pistol Championships with the score of 2596. The 120 firing point Sparrows Point, Maryland, Police Department pistol range was taken over by 381 pistol shooters on June 1, 2 and 3. Two National Pistol records fell with Marine Corps Schools team of Quantico, Virginia shooting 1150 for a new all time .45 caliber National Match course record. Fisher of El Paso shot 200 plus 10 to set a new civilian center fire timed fire record.

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THE AMERICAN RIFLEMAN

Dope Bag

answers by THE RIFLEMAN'S PANEL OF EXPERTS

Julian S. Hatcher •
Harold MacFarland •

Al Barr •
Phil Sharpe •

Elmer Keith •
Hugh C. Stith •

HATCHER LOOKS AT PRODUCTION

From correspondence it is evident that the American shooter is a bit confused, to put it mildly, about what to expect in regard to the availability of guns and the ammunition for them during the foreseeable future. Everything that I could learn here in Washington confused me too, so I decided to try and find out something definite from the arms and ammunition companies themselves.

On my ten-day trip I visited the Remington Arms Company at Bridgeport, and the Winchester Division of Olin Industries, Inc., at New Haven, both makers of arms and ammunition, the largest in the business. In addition, I went to a number of plants making rifles, pistols, and shotguns, but no ammunition, such as Marlin, Mossberg, High Standard, Savage-Stevens, Harrington & Richardson, Colt, and Smith & Wesson. Everywhere the story was the same. No one knows what to expect out of Washington, or how much it will affect production, or how much they can or will be allowed to make. When I got through the trip, about all that I could say with certainty is that a substantial volume of both arms and ammunition has rolled off the production lines since the beginning of the Korean crisis a year ago, and that for some months at least there should be no critical shortage.

As to ammunition, the Korean situation developed just at a time when the shelves that had been emptied during the war had filled up again. There was apparent the beginning of a slump in demand and production, and the sales force was beginning to scratch gravel. Factory production schedules were being revised downward. Then came the Korean aggression, and almost overnight every shelf in the nation was empty of ammunition again. It was a question once again of "the early bird catches the worm" (or the Hornet or the Bee).

So with that background to work against, the companies revised their production schedules upward, not downward, and a lot of ammunition was made before material allocations began to cut into production again. During the last year, a very large volume of ammunition has reached dealer's shelves, but now the flow has slowed down owing to material shortages. What the situation will be in the future depends on many things.

As to guns, very much the same thing has happened, with this difference—the stock has not disappeared so rapidly. It is one thing for a few dozen shooters to rush down to the dealer and grab a dozen boxes or so of ammunition apiece, but not quite so easy to grab guns—it flattens the old

pocketbook too quickly. So right now you should be able to get the gun you want, except possibly some of the newer models, and right now plenty of guns are being turned out; but if the defense situation becomes critical, guns will again be scarce.

One unfortunate result of the defense crisis is the current absence from the market of components and primers for reloaders. The shooters see in this a deep plot on the part of the companies to break up and put out of business the entire handloading game, and we receive a large volume of mail, some of it very bitter, on this subject. The companies are receiving it too, and it worries them a lot. They are by no means anxious to build up customer ill-will.

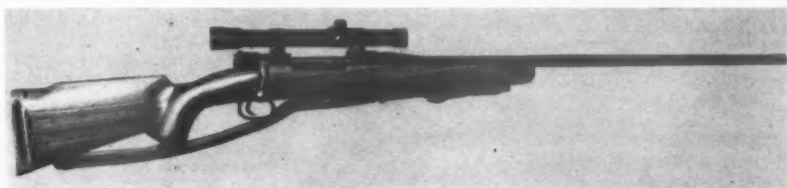
Actually, the manufacturers tell me that they have no intention whatever of going out of the primer and component business permanently, but right now they are caught in a squeeze between an unprecedented and insistent demand for cartridges from their regular jobbers and dealers, and a tight allocation of copper, lead, and zinc by Uncle Sam. Result—loading rooms partly idle for lack of cases, primers, and bullets, and sales force screaming for more goods to deliver. Under these conditions manufacturers do not feel that they should be asked to sell cases and bullets and still further curtail their own loading operations and sales of finished cartridges as a result.

In the case of primers, the same holds true, but there is an added and compelling factor, which is that the government has asked the companies to make primers; and the number the Ordnance Department wants adds up to more than they have the machinery to produce. Obviously they can't make primers for the public and at the same time turn down defense orders for lack of facilities.

Even so, the NRA is not giving up and we have been working for several months with different manufacturers in the ammunition industry to try to promote production of primers for the reloaders. We do have some very good news from several directions and hope to be able to announce something definite before long. In the meantime, members are asked to withhold inquiries and watch for an announcement.

New developments in the gun field have been another casualty of the war. Practically every company in the business has something new in the works, and some of these were well along on the way to the public; but the uncertainties of the situation practically guarantee that all new guns will be kept tightly under wraps until the atmosphere clears considerably.

My crystal ball isn't working too well, so with this as background, you take it from here!—JULIAN S. HATCHER.



Weighing only 7½ pounds as shown, this sporter is capable of 3-inch 10-shot groups at 200 yards. Chambered for .270 Ackley cartridge, the rifle has a 24-inch Pride barrel, Mauser receiver, and Weaver K2.5 scope and mounts. Rifle and custom stock were built for William E. Williams by R. A. Field. Owner and builder both live in Seattle, Wash.

PISTOL POWDER WARNING

I'm interested in a comparison between the Dupont Pistol Powder No. 6 and Dupont Improved Military Rifle Powder No. 3031. I am chiefly interested in the breech pressure obtained by equal weights of each. What would be the effect upon bullet velocity if Pistol powder was used in high power rifle ammunition?—I. A. BARKER, Indianapolis, Ind.

Answer by Phil Sharpe: You can't compare Pistol No. 6 powder with IMR No. 3031; pistol No. 6 and other handgun powders are designed to burn fast in small quantities so that they can push bullets in short bar-

rels. Confine it in quantity in a big rifle case with a long barrel (or even a short barrel and rifle case), and you get a dynamite blast which will take any gun apart. Pistol powders have been used to give super experimental proof loads of 100,000 to 125,000 pounds for deliberately wrecking guns.

Do not attempt to use pistol powder—any type—in any rifle cartridge or the gun will be wrecked.

PRIMER POCKET CLEANER

One of the cleverest ideas we have seen for cleaning primer pockets, which is a necessary operation in reloading, has recently

come to our attention. Member F. L. Smith, 131 North Sixth Street, Clarksburg, W. Va., sent us a few samples of dowel rods which are a snug fit inside the primer pocket. These dowels are made from northern white cedar, which is of a coarse-grained nature and the primer pocket residue on the tip of these rods seems to make a very effective abrasive for cleaning the pockets well. Since this is a very soft wood, the rod can be a snug fit inside the primer procket and it polishes the sides up as well. This is the simplest and one of the most effective methods of cleaning primer pockets we have tried. When the tip of the rod becomes glazed with the primer pocket residue, it is a simple matter to cut off a short section, or better still, to rub the end over a medium to coarse piece of sandpaper or emery cloth and remove the residue. These rods are not available through Mr. Smith, but he is passing the tip along, as he has found it 100 percent effective and thought others would be interested in it.—AL BARR.

PROOF FIRING MAUSER

I have recently acquired a 7.9 mm. Mauser action. The serial numbers match throughout, action is tight and operates smoothly. Do you consider it worth rebarreling?—LT. WILLIAM R. LUPTON, JR., A.P.O., San Francisco, Calif.

Answer by Harold MacFarland: You can always proof this rifle without too much trouble. If you can round up some 8 mm. ammunition, just break down a few rounds. Make up your proof loads by adding a rough estimated 10 percent by weight or bulk to an existing load. Tie the weapon down and pull it with a string. If it stays in one piece after several of these, you have a rifle. If it doesn't, you haven't carried home a piece of junk.

HANDLOADING SUGGESTIONS

The old Paddy O'Hare Springfield rear sight micrometer is near perfection for precision resetting of the Belding and Mull powder measure tube. Try it, and you will see how well it fits. Record readings for future duplication of loads.

A six-inch length of 3/8-inch diameter (inside) tubing is perfect for pouring powder. It should be threaded inside full length and one end plugged. If mounted in a small V-block with open end over pan on balance, rotation will dribble powder one kernel at a time.—E. D. CAMPBELL, GROSS Ile, Mich.

"UNSERVICEABLE" LABEL

What does the label 'serviceable' or 'unserviceable' mean when attached to Springfield and Enfield rifles which have been purchased from the DCM?—J. H. STOCKDALE, Auburn, Ill.

Answer by Phil Sharpe: Any used gun which is turned in to a depot is classified automatically as 'unserviceable'. After qualified Ordnance personnel have inspected the gun and found its condition to be within certain standard specifications this label is changed to 'serviceable'. Immediately following the recent war the demobilization program flooded depots with used weapons. Many of these rifles would come within the 'serviceable' standards but it was more economical for the government to dispose of them as 'unserviceable' than to expend the necessary man-hours for inspection.

SHORT BENCH-REST BARRELS

I have been barrelling a few bench-rest rifles in various of the Donaldson wildcat calibers and have been wondering about the effect of barrel length on accuracy. My equipment is such that a 26 3/4-inch barrel

is the longest I can chamber for .250 Donaldson or .250 Donaldson Ace. In .219 Donaldson caliber, 28 inches is the limit.

All other things being equal, could my relatively short barrels be expected to perform as well as the more commonly used 30-inch barrels?—DONALD E. ALDERMAN, Portoa, Cal.

Answer by Al Barr: I'm beginning to wonder whether or not we actually need extremely long 30- to 31-inch barrels, even for bench rest shooting. Some of the most accurate rifles I've had have only 26- to 28-inch barrels. In fact, the most accurate I now own is a .219 Donaldson with a 28-inch barrel, and it isn't a straight barrel either but tapers to about an inch at the muzzle. My first .250 bullgun was a Pfeifer barrel with about 26 3/4-inch barrel and it was superbly accurate. Again, it was about one inch at the muzzle. I now have several other .25-caliber bullguns with 30-inch barrels and about 1 1/2 inches at the muzzle and, although accurate, they don't do any better than the shorter barrel.

BRASS CASE DISTORTION

Some of the boys have discovered that their fired brass fails to expand evenly. They notice that the cases at the head near the web do not show uniform expansion all the way around the body.

There is nothing unusual about this. A cartridge case is slightly smaller than the chamber, and when in firing position, because of its own weight, lies on the bottom of the chamber. When fired, the brass expands quickly to fill the chamber with the bulk of this expansion on the top and sides, but the case does not jump up to center itself. The ballistics expert can, through examination of the fired case, tell exactly how the case was positioned in the chamber at time of firing.

For the technical man, this 'top' expansion is not always true. In certain individual guns, the extractor holds the case off the bottom of the chamber and against the top or even the far side from the extractor. However, a check of the individual gun will reveal these details.

This off-center expansion does not harm or injure the brass.—PHIL SHARPE.

COMPOSITION OF GUN BARRELS

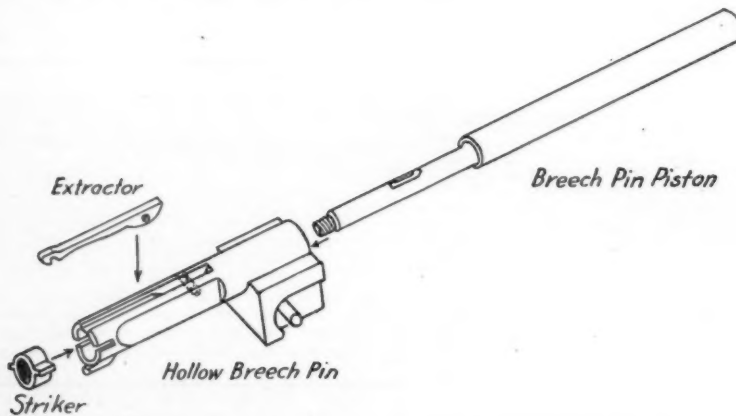
What is the composition of Colt .45 automatic barrels? Is stainless steel suitable for rifle barrels?—VICTOR D. SMITH, Torrance, Calif.

Answer by Harold MacFarland: The exact composition of Colt's barrels is a secret known only to Colt. It is probably on the order of an S.A.E. number 2340, carbon, manganese, and nickel steel.

Stainless steel has been used for rifle barrels. There have been too few reports on it to really determine its worth, but indications are that it is more highly resistant to high velocity erosion than ordinary steels. The drawbacks are that it is very difficult to blue; and that it is extremely difficult to bore, rifle, and chamber.

LEADING AND INACCURACY

Many of the thousands of old single action revolvers still in use show a great discrepancy between the diameter of the chamber mouth and the groove diameter of the barrel. In many .45 Colts the chambers would run from .450 to .458 inches, while groove diam-



HENRY RIFLE DISASSEMBLY

Please tell me how the firing pin of a .44 rimfire Henry is fastened to the breech bolt or breech pin base? Is it screwed, pinned, pressed, or what?—Mrs. R. R. ZUFLE, Gretna, La.

Answer by General Hatcher: The striker on the front of the bolt of this old Henry rifle is screwed onto the rod which projects through the rear of the receiver and cocks the hammer when the finger lever is operated.

This rod in turn is prevented from un-

screwing by the extractor which has a lug on the bottom that fits in a slot in this firing pin rod (or piston, as it used to be called in the old Henry nomenclature). To get the firing pin off the bolt you first have to unscrew the firing pin rod (or piston), and before you can do that you have to remove the extractor.

The extractor is held to the breech bolt by a pin which can be removed by driving it out with a drift through the hole in the receiver near the top. Before you can drive out this pin you have to cock the mechanism and have the bolt all the way to the rear.

eter of the barrels would run from .450 to .454 inches. In .44 Special, chamber mouths varied from .431 to .434 inches, while the groove diameter of the .44 Special barrels usually measured between .4265 and .4285 inches. This produced more leading and inaccuracy than any other single cause. A six-gun slug should be sized to exact groove diameter. It should not be over .001-inch larger than groove diameter, and the chamber, mouth should not be over .001-inch larger than groove diameter.

When fired, a slug upsets to fill the chamber mouth perfectly; if the groove diameter of the barrel is smaller than the chamber mouth, the slug must somehow swage itself down to fit the groove diameter of the barrel. The process results in considerable distortion and shaving of the bullet, and is the direct cause of most leading and inaccuracy. The chamber mouth in the cylinder of a revolver is really the throat and its diameter should correspond exactly with the barrel groove diameter. Of course, barrels must be chamfered some to prevent scraping and lead spitting, but the chamber mouths and groove diameters should be equal.

Christy Gun Works, 875 57th Street, Sacramento, Calif., is now turning out barrels and cylinders with perfectly matched mouth and groove diameter. Christy can furnish .44 Special barrels and cylinders, with both chamber mouths and groove diameters running .429 inches, and these will shoot. The .357, .38 Special, .44 and .45 cylinders we have examined from the Christy works have been superior jobs.

Many revolvers have been blown up from too great discrepancy in chamber and groove diameter. Inaccuracy has been reported for the old Single-Action Colt which, when run down, often showed hard bullets being used in a cylinder with chamber mouth some seven thousandths-inch above or four or five thousandths-inch below the groove diameter of the barrel. If a single-action Colt is fitted with a cylinder whose chamber mouths measure exactly the same as the groove diameter, and the gun is tuned up properly, and fitted with a lightened hammer or short action, it is just as accurate as any other six-gun.

Also, a great many guns have had cylinders changed from one gun to another, which further complicated matters. It might prove worthwhile for shooters to compare chamber mouth diameters with groove diameters of a barrel instead of discarding various bullets because of leading.—ELMER KEITH.

RECHAMBERING THE JAP 7.7

Will you please give me the dope on chambering out the Jap 7.7 to .300 Savage? What if they are chrome lined?—TOM CHACE, Worcester, Mass.

Answer by Harold MacFarland: The Jap 7.7 mm. has a bastard metric thread approximating 17.1. You can't cut it without special gearing. For that and other reasons, we don't rebarrel the 7.7; but instead set the barrels back and rechamber for .300 Savage. The 7.7 has a fine chrome lined barrel that is very accurate. In setting a barrel back, I shorten it about 15/32-inch which cuts it off at about the bottom of the extractor slot. Four old threads remain; then you have a relief ring, and you must cut four new ones. I set the gears for a 16 thread, and set the threading tool just

enough out of step to bring the first thread across the ring into step with the original threads. Then each of the other three is increasingly out of step. When they caliper tight, I coat with white lead to prevent tearing, and force them home in the hard receiver. After one screwing home, they fit perfectly. You can't well work this scheme on a full length thread.

You will have to reshape the loading ramp of the receiver to get the gun to feed. This mainly involves rounding the back end and filing a shallow channel in the middle of it.

You have a good point in the fact that the chrome lined barrel is hard on reamers. However, only the bore, not the chamber, is chromed. If the chamber was chromed you couldn't touch it. The way I do the job on the .300 Savage my reamer lasts indefinitely and practically all the guns I've worked on are chrome lined.

HOW MANY RELOADINGS?

How many times can Swift cases be reloaded?—ALBERT KNUDSEN, Provo, Utah.

Answer by Phil Sharpe: The number of times a case can be loaded depends on the load and the brass. I still am using most of the original cases I obtained when the Swift was first made. Visual inspection of the outside will usually locate any defect in a case.

RECORD BENCHREST GROUPS

The recently reorganized National Bench Rest Shooters Association requires that all record or near record benchrest competition groups be remeasured. To eliminate the controversy over the actual sizes of record groups, the Association has adopted more accurate measuring equipment. All available record or near record groups have been remeasured with the new equipment, and the following group sizes are now official.

The record 100-yard, 10-shot group was fired with a .22-250 by William Kiser at Johnstown, N. Y., in September 1950. It measures .3684-inch, center to center, instead of .372-inch as previously claimed.

The smallest 100-yard, 5-shot group on record was fired with a .250 Savage by Paul Dinant, of San Diego, Calif., in May 1950. Remeasurement established its center to center spread as .1057-inch instead of the original .091-inch.

The 200-yard, 5-shot record group was fired with a .22-250 by Bill Guse, of Midland-Odessa, Tex., in May 1950. The group measures .3896-inch. The second best 200-yard, 5-shot group was fired with a .219 Donaldson by F. M. Riddle, of Oil City, Pennsylvania, in August 1949. The 5 shots measure .4077-inch, center to center, instead of .399-inch as previously reported.

The best 200-yard, 10-shot group was fired with a .219 Donaldson by Jack Snyder at DuBois, Pa., in May 1950. Final measurement of the target shows center to center spread of .7580-inch, instead of the initially reported .717-inch.

The record 300-meter, 5-shot group was fired with a .250 Ace by Sam Clark at DuBois, Pa., in May 1950. New center to center measurement is .6735-inch, original measurement was .656-inch.

The best 300-meter 10-shot group was fired with a .255 Hoyer by Al Hoyer at DuBois, Pa., in May 1950. Center to center spread for the 10 shots is 1.9086-inch; previous measurement was 1.968-inch.

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SCOPE MOUNTS. Griffin & Howe, \$19.50. Redfield Jr., \$12.50 to \$19.50. Buehler, \$16.50 and \$20.00. Tilden, \$16.50. Mykrom 3/4", 1, \$14.85. O'Dell's Scope Mount for pistol cases, \$4.50.

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6.5x55 Mauser 156 gr. softpoint	4.30
6.5x55 Super Match, full patch Spitzer, 139 gr.	4.30
8mm Danish Krag (rimmed) 196 gr. softpoint	4.95
8x57 Mauser, 124, 159 & 196 gr. softpoint	3.75
8x57JR Rimmed Mauser, 196 gr. softpoint	4.35
8x60 Mauser, 196 gr. softpoint	4.95
9mm Luger 116 gr. M.C. (per 50)	4.75
9.3x57 Mauser, 285 gr. softpoint	5.50
9.3x62 Mauser, 285 gr. softpoint	5.50
9.3x72R Rimmed Mauser, 201 gr. softpoint	6.80
9.3x74R Rimmed Mauser, 285 gr. softpoint	6.80

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6.5mm Super Match 139 gr. full metal jacket \$4.95
6.5mm Mannlicher 156 gr. softpoint 4.60
7mm Mauser 156 gr. Spitzer softpoint 4.80
9mm Mauser 139 and 196 gr. softpoint 4.80
9mm Luger 116 gr. S.P. 3.95
9mm Luger 116 gr. M.C. 3.20
9.3mm Mauser 285 gr. softpoint 4.75
30/06 Super Match (full patch) 160 gr. Spitzer boat-tail 5.25

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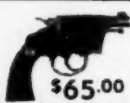
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These record groups are all of recent vintage, but on May 16, 1901, the late C. W. Rowland, of Boulder, Colo., fired a 10-shot group at 200 yards that is still unchallenged. The shooting was from a machine rest, but it did demonstrate the accuracy obtainable with a carefully designed rifle and load. A remeasurement of the original target reveals a center to center spread of .727-inch. When the target was fired, the maximum spread was reported to be 13/16-inch or .8125-inch.—AL BARR.

MAKING BARREL BANDS

When making barrel bands for use with sling swivels, sight bases, and forearm-anchoring bands, I use hot pressed hexagon nuts in sizes from 3/8 inch to one inch as a source of material. These are readily available and provide a material that doesn't require the drilling of large holes, or large cutting operations. I use the hot-pressed variety because it is perfectly annealed and easily machineable. The cold punched, semi-finished, and finished varieties are not so readily machineable.

The first step is to ream or drill the nut to remove all threads and to provide a hole which will fit the barrel. The nut is then drilled and tapped for the forearm screw, and if for a sight base, the dovetail is cut in it. These steps come first because the nut at this stage may be gripped in the vise without damage.

The next step is to remove surplus metal from the outside of the band. Rough off the surplus with straight-line hacksaw cuts. Then bring to final shape with a bench grinder or file. As the band approaches final shape, you will find it difficult to hold while grinding. I slip it on a wood dowel or other piece of hard wood; then anchor it in place by means of a woodscrew wedge which is driven into the end of the dowel. The band may now be easily held while all grinding, sanding, polishing, and finishing operations are completed.—RALPH E. GAINES, Miami, Okla.

CONVERTING JAPANESE RIFLES

Recently I have noticed a large number of Japanese rifles offered for sale. What is your opinion of Japanese rifles? Would it be satisfactory to convert one to a standard caliber such as .257, .270, or .30-06? Is there any danger of blowing up one of these rifles with standard loads?—E. VAN DER SMISSEN, Lawrence, Kansas.

Answer by Harold MacFarland: The Jap rifle isn't in the same class with a good Mauser, Springfield, or Enfield. However, a good Jap rifle, in the matter of strength alone, is far superior to any of them. It uses a unique system of breeching that seals the breech and supports the bolt.

Jap rifles were made in two calibers, the 6.5 mm. and the 7.7 mm. Those made before and during the early part of the war may be considered safe rifles. Those made later in the war are highly dangerous. As a general rule, Japs which are finished smoothly and have a good blue finish are safe. Later ones were very rough and are dangerous. Avoid any Jap which has the rear tang of the receiver made integral with the receiver, for these receivers are cast and dangerous. Good ones have a separate tang, adjustable rear sights, and an oval shaped bolt knob. Avoid any other kind.

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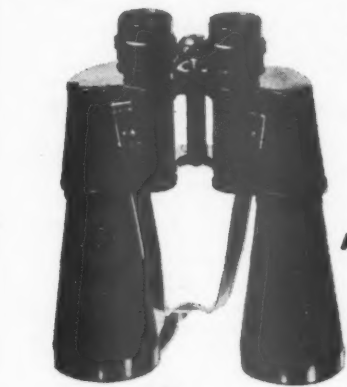


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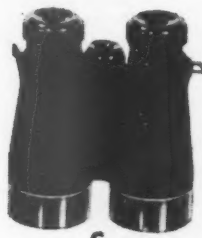
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A



C



B



D



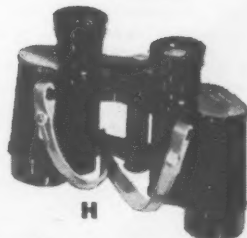
E



F



G



H

A. 28x56 HERTEL & REUSS prism binocular. ENTIRE OPTICAL SYSTEM COATED. Made in Kassel, Germany, using the world-famous Jena glass, known for its high light transmission power and enormous resistance to heat. The accurate and rigid adjustment of optical elements into the body of cast magnesium alloy guarantees the perfect alignment of all optical parts under the most constant and severe use. Central focus. Complete with beautiful case and straps, tax included, only **\$159.50**

B. 15x56 HERTEL & REUSS. Same specifications as 28-power described above. Complete with case and straps, tax included, only **\$149.50**

C. 5x40 NATIONAL FIELD GLASS. COMPLETELY COATED OPTICS. Magnesium case for lightest weight. Central focus. American made. Complete with beautiful leather case and straps.

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D. UNIVERSAL 6x30 PRISM BINOCULARS. Coated optics BRAND NEW and in original carton with factory registration card. Individual focus to accommodate owner's eyesight, as preferred by Army and Navy. **THE PERFECT GLASS FOR HUNTING**, with 435 foot true field at 1000 yards. Lightweight aluminum body, vinylite covered. Strain-free mounting of prisms and objectives with new optical cementing methods to withstand extreme temperatures. Sealed with Buna "S" gaskets and pressure tested for moisture proof and dust proof sealing. These American made binoculars actually list today for \$102. Our special price, complete with case and straps, only **\$59.50**

E. 6x18 HERTEL & REUSS PRISM BINOCULAR. COMPLETELY COATED OPTICS. Central focus. Absolutely the most compact and finest prism binocular made, using the famous

Jena glass. Largest field of view of any 6x18 binocular. Complete with case and straps, tax included only **\$69.95**

F. 7x35 HERTEL & REUSS BINOCULARS. Very light weight—only 16 oz. COMPLETELY COATED OPTICS, central focus. Here is a new post-war German creation with advanced optical design. The largest field of view (485 foot at 1000 yards) compared with standard 7x35 or 7x50 Navy binoculars on today's market. Made from the world famous Jena glass. Ideal for day or night use. Compare it with ANY glass made. Complete with case and straps, tax included, only **\$69.95**

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H. 8x30 HERTEL & REUSS BINOCULARS. Same specifications as 7x35 illustrated under "F" at left. Complete with case and straps, tax included, only **\$59.95**

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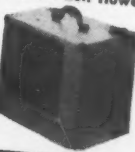
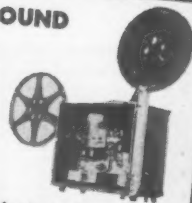
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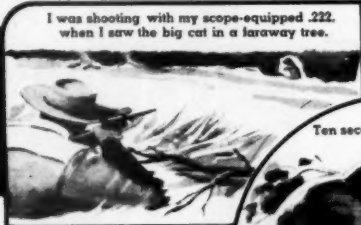
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6.5 mm. caliber are to rechamber to a .257 Roberts wild cat cartridge, which must be handloaded. The bore is too large for any of our regular .25 calibers. You can have the barrel rebored for the 7 mm. Mauser cartridge, or you can have the action rebored for .257 Roberts or .300 Savage. A Springfield or Enfield barrel can be fitted to it and chambered for the .300 Savage. The action is too short for .270 and .30'06. The barrel can be set back on the 7.7 mm. Jap' and then rechambered for .300 Savage. This makes a good, safe, accurate conversion if properly done, and usually costs about \$15.00.

MAGNUM SHOTGUN SHELLS

The new type shell crimp shortens shotgun shells enough so a three-inch Magnum 12-gauge shell will chamber and operate in the magazine of some standard shotguns. Is it considered safe to fire Magnum 12-gauge shells in a standard gun?—VINCENT FREW, Lydon, Ill.

Answer by Phil Sharpe: The three-inch 12-gauge Magnum shell would be highly dangerous in any standard shotguns.

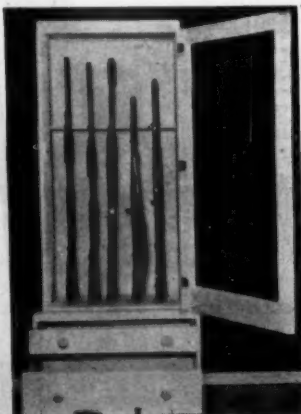
Let's look at the facts. The new crimp shells are shorter as loaded than the old type with spun crimp. The length of a shell is always measured on the fired case. Thus, when these shells are chambered in a short chamber, they may go in and the action close and lock, but on firing, the crimp has no place to go except into the throat or 'forcing cone' of the barrel. Pressure builds up rapidly past the danger point and the shot charge, and wads are driven out of the case mouth, shredding it to bits. Sooner or later the gun, built for lighter loads, lower pressure, and lighter recoil, particularly in the case of the automatic, just gets tired. Then we have what is mistakenly called 'an accident'.

COPPER COLORED BORE

Gunsmithing books usually state that copper fouling even if slight must be removed, for it can cause corrosion of the bore through electrolytic action.

My .257 Roberts is about as clean as I can get it. The bore is shiny, smooth, and free from any residue. However, the lands of the rifling at the muzzle are distinctly copper colored. I cannot seem to remove this color, which obviously indicates a thin layer of copper on the steel. Will this copper residue cause corrosion? How can it be removed without using abrasives?—DONALD H. CASTLE, New Canaan, Conn.

Answer by Al Barr: I never worry about that thin copper plating inside a rifle barrel. I find it in a lot of my guns. I positively though would remove all apparent lumpy fouling in the grooves or on the lands, as that definitely will cause inaccuracy. I've never had a rifle barrel ruined by leaving that thin copper plating in the bore. If you were using old corrosive chlorate primers and this priming residue got to work between the plating and the steel it could cause corrosion. Frankly I don't think you have anything to worry about, because you have the same condition as thousands of others. The only way to completely remove the copper fouling is an ammonia preparation. Some sporting goods stores may still sell the Winchester Crystal Cleaner, which is an ammonia solution designed especially for removing metal fouling. I never use it



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unless I have to though, because unless you use it as directed it will rust the inside of the barrel in a hurry.

RIFLE RECOIL BRAKES

What is your opinion of rifle recoil brakes?—M. KURTZ, Wilmington, Calif.

Answer by Harold MacFarland: Most muzzle brakes will just about cut recoil in half. You can hold a .30-'06 so equipped like a pistol and shoot it. At the same time, until you have shot one, you have no conception of what they will do to your ears. I have a deaf ear right now from shooting one of the contraptions. Herter has just announced a new one which they claim will cut muzzle blast, but it is still so new I have had no chance to try it. There is one make which has been tried and it gives a reduction of that ear-splitting blast. This is the Sha-Cul.

LOADS FOR .45 ACP

I recently began handloading for the .45 using the Hensley bullet No. 118 and 3 grains of Bullseye. I found the load to shoot exactly where pointed at 25 yards, and to work the action reliably. At 50 yards, the bullets were all over the paper—no group whatsoever.

The bullets are sized .452 inch, which is the size of the barrel found by pushing a bullet through and miking it. The base of the bullet is seated slightly below the cannelure of the Remington case, because the cartridge will not chamber when more than about 1/16 inch of the shoulder projects out of the mouth of the case.

Various loads were tried using new factory primed cases, but I could not get any to group at 50 yards.

What would be a good 50-yard load using the above components.—A. DENARO, Glen Rock, N. J.

Answer by Elmer Keith: Your charges are much too light to stabilize that slug to 50 yards. I would advise increasing the powder charge to 5 grains of Bullseye for 50-yard shooting. That should turn the trick. Are you sure it's the load? If accurate at 25 yards, it should also be accurate at 50, but a heavier charge would be much preferred at the longer range.

CHROME PLATING RIFLE BORES

Would hard chrome plating decrease the bore diameter of my rifle?—JOHN H. CREA, Newport News, Va.

Answer by Harold MacFarland: Hard chrome plating in a rifle bore will be on the order of .0001-inch and bores normally vary several times that amount.

Chrome plating is great in a brand new barrel. I wouldn't advise it on a barrel that has been used. It may stand up well but will look sort of 'blotchy' inside.

12-INCH TWIST FOR .270

What length twist is most satisfactory for .270 Winchester 130-grain Silver Tip?

What length twist is most satisfactory for .270 Winchester 100-grain soft-point?

Is the 100-grain satisfactory for mule deer?—LELAND S. HOBSON, Manhattan, Kansas.

Answer by Al Barr: I have been using a .270 rifle with a 14-inch rifling twist. It will stabilize 100- and 110-grain Sierra bullets beautifully, but it will not quite stabilize the 130-grain Sierra. If I were getting a com-

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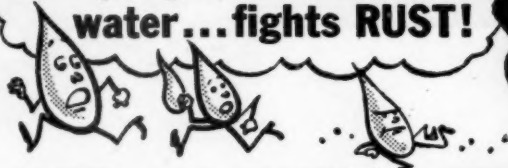
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promise twist it would be one turn in 12 inches, which I understand will handle any bullet up to the 130-grain Spitzer type as well as a relatively blunt-nose 150-grain. If I wanted to use the heavier bullets exclusively, I'd prefer a twist of one turn in 10 inches.

I would not use a 100-grain bullet in the .270 for big-game hunting, because velocity is extremely high and the bullet may expand too rapidly without giving adequate penetration for dependable killing qualities. You could hardly surpass a 130-grain bullet for the .270, except, of course, for varmint shooting where I would use the lighter bullets.

CARTRIDGE MEASUREMENTS

Shooters continuously request measurements and drawings of cartridges and chambers, but these cannot be supplied, for they are not available. As every experienced shooter knows, cartridges and chambers vary.

The rifle manufacturer grinds final chamber finishing reamers to the maximum dimensions. Thus, the chamber is 'large'. But reamers wear and must be resharpened by honing. Each honing reduces the reamer size until it is down to the minimum acceptable measurements. It must then be discarded.

The cartridge manufacturer makes a set of case final forming dies to the smallest acceptable dimensions. Cases formed in this die are minimum. But, these dies also wear, and when they have enlarged to the maximum case dimensions they too must be discarded.

Thus, there are two sets of measurements—chamber and cartridge—with permissible tolerances in both. Yet they must be coordinated. A maximum size cartridge must chamber readily in a minimum chamber, so the largest cartridge must be held to dimensions just under the minimum acceptable chamber.

To enable the manufacturer to get longer wear from his reamers, low priced guns usually have somewhat larger chambers than the more expensive models. Custom gunsmiths, for reasons of their own, also have their variations. They have ideas of individual nature as to tightness of chamber.

The tolerances mentioned above are not great. The 7.92 mm. cartridge case made

for the Chinese during World War II, by the Western Cartridge Company will serve as an example. Neck thickness was specified as .011 to .015—only .004-inch variation from maximum to minimum. Shoulder diameter varied from .4230 to .4328-inch. Head diameter ranged from .463- to .470-inch. Flashhole specifications ran from .085- to .089-inch; primer pockets from .2088- to .2093-inch.

These tolerances are smaller than many have believed. The tolerance for the flash-hole is four one-thousandths; for the primer pocket, one-half thousandth. Other variations are under five one-thousandths except for case length, which is permitted to vary .011 or eleven one-thousandths, and the shoulder diameter which may vary almost as much as ten one-thousandths.

There are no standards for wildcats and 'improved' versions of existing cartridges. Each rifle maker has his own ideas, and many, in a further effort to improve performance, change their own 'improvement' with each new reamer. Thus, it will be seen that we cannot give dimensions for any cartridge or chamber. This is true especially of wildcats, for while variations of manufacture on a standardized cartridge are held to four or five thousandths, many versions of the supposedly same wildcat may vary ten times this amount.

The wildcat maker should be able to supply you with loading data for the rifle and cartridge he makes for you. If he cannot, he should not accept your order, or he should advise you that you strictly are on your own in developing loads. —PHIL SHARPE.

40 GRAIN BULLET FOR HORNET

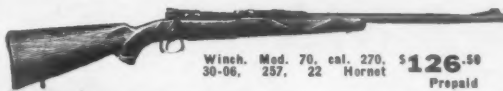
I've been told the 40-grain bullet will spoil the barrel of my Model 70 .22 Hornet. Is it OK to use this bullet, if so what powder charge should I use?—H. T. HANNA, Oil City, Penn.

Answer by Al Barr: Anyone who tells you that a 40-grain bullet will ruin your .22 Hornet surely has passed along very bad information indeed. In fact, 40- and 41-grain bullets are very popular in the Hornet. On page 25 of the January 1950 issue of the RIFLEMAN we listed some very good loads for the Hornet giving pressure and velocity. With the 41-grain Sisk soft-point bullet and 11.5 grains of 4227 powder the

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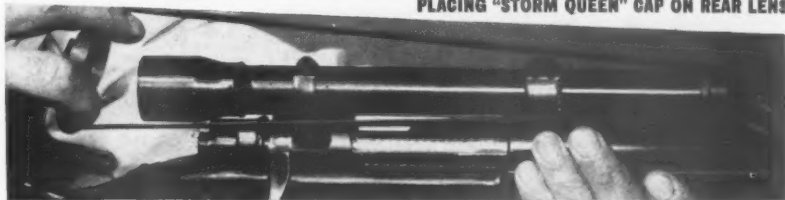


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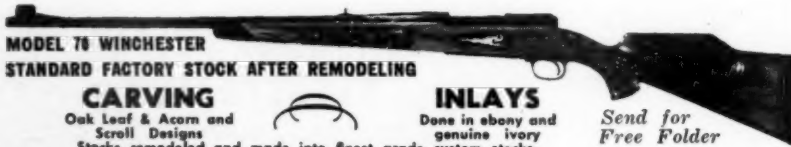
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velocity was 2572 feet per second at only 35,000 pounds pressure, and therefore, the load could be increased slightly. With 11.2 grains of 2400 powder the velocity was 2766 at 42,900 pounds pressure, which is about maximum.

LOADING THE .222 REMINGTON

Owners of rifles chambered for the .222 Remington cartridge can now reload with results equalling the performance of the factory cartridge. All major loading tool makers can now supply dies.

We warn handloaders to use caution in working up loads. Many custom rifles are being built and others are rechambered for this cartridge, and some chambers examined are very tight. These might develop excessive pressures with top loadings.

For comparison, all cases were re-used Remington, and all fired in the same rifle. We originally published loading data with 4198 powder and stated that this was the best for this cartridge, but many readers submitted loads which they claimed would produce less than one-inch groups for them. In the Remington 722 used for the tests, few of these proved accurate, some making 2 1/2 to 3-inch groups. Instrumental velocities were recorded at 60 feet on the Potter Chronograph. Following the formula of ammunition makers, this is also translated into 'muzzle velocity'.

Remington 1951 factory loads were used as a check. All handloads used Sierra bullets. The Remington factory load had an overall length of 54 mm. (2.125 inches). We found that best performance was obtained by seating the Sierras to an overall of 56 mm. (2.20 inches). At this length they would not feed through the magazine of the Remington rifle.

The loading of 4198 listed as top load is safe in normal chambers. Hercules 2400 was in the top pressure brackets, and is not recommended for the .222 Remington. Other powders appeared to be low pressure.

Bullet	Powder Charge	Instrumental Est.	
		Velocity	MV
45-grain	4198 20.0	3051	3230
45-grain	4198 20.5	3142	3322
45-grain	4198 21.0	3170	3350
45-grain	4198 21.5	3280	3460
45-grain	3031 22.5	2757	2936
45-grain	3031 23.0	2883	3062
45-grain	3031 23.5	2914	3093
50-grain	Remington Fact.	3029	3168
50-grain	4198 19.5	2944	3100
50-grain	4198 20.0	3013	3170
50-grain	4198 20.5	3077	3234
50-grain	4320 24.0	2724	2880
50-grain	4320 24.5	2826	2982
50-grain	4320 25.0	2884	3040
50-grain	4895 23.5	2866	3022
50-grain	2400 15.0	2740	2896
50-grain	2400 16.0	2886	3042
55-grain	4198 19.0	2803	2938
55-grain	4198 19.5	2838	2973
55-grain	4198 20.0	2918	3043
55-grain	4895 21.0	2525	2660

The above data indicates that 4198 is the best powder for this cartridge. — PHIL SHARPE.

REMOVING GREASE

What is the best way to remove rust preventive grease from a new rifle?—DONALD E. WORTHEN, Cape Elizabeth, Me.

Answer by Harold MacFarland: I wrap the gun thoroughly in newspaper, suspend it overnight above a heating stove and when

THE AMERICAN RIFLEMAN

the gun is hot, wipe the rust preventative off with rags. Then I tear the action down to the last small part and scrub each individual piece with an old toothbrush and commercial dry cleaning solvent.

IMR. NO. 4198 LOADS

Frequently we are asked to recommend a suitable powder for loading some of the large caliber obsolete cartridges and also for a good powder to be used with mid-range gas-check loads. We have very good success with IMR 4198 powder for this purpose. NRA member and gunsmith Hilary McInturff, of Usk, Washington, has found that 4198 powder is the very best powder he can get for some of the big calibers, including a rechambered 9.3 x 72 mm. double rifle. The rifle was chambered for the .357 Elliot Express using the .405 Winchester case necked to approximately .36 caliber. A bullet mould was made to cast a 270-grain gas-check bullet. The best load for this caliber, which should also work in the original 9.3 x 57 mm., is 36.5 grains of 3031 or 30 grains of 4198 powder. With a 247-grain bullet in the .357 Express the best load is 31 grains of 4198 powder. The hollow-point 247-grain bullet has proven very dependable on deer.

In a Model 1886 Winchester in .40-65 caliber Mr. McInturff uses 30.5 grains of 4198 powder with a 260-grain bullet. In the .38-55 his pet load is 26 to 28 grains of 4198 powder with a 255-grain bullet, and in the .38-56 he uses 28 to 30 grains of IMR 4198 powder.—AL BARR.

POWDER STABILITY

I have an opportunity to purchase a keg of government 4895 powder. The container hasn't ever been opened and it has been stored in a garage where it was subjected to all temperature and humidity changes for four years. Is the powder OK? —C. F. GILBERT, Maupin, Ore.

Answer by Phil Sharpe: Modern smokeless powders are not affected by normal ranges of temperature. I would say the temperature in my magazine would range from -10 to 100 degrees. Powder which is properly made, stored and sealed to prevent moisture from reaching it will remain good almost indefinitely. I would suggest that you open the container on a normal, dry day and transfer enough to fill about three quart jars. These jars should be kept sealed with regular rubber seals and the original container sealed free from moisture until more powder is needed.

RELINING BARRELS

Would you suggest gunsmiths who can reline a .38-50 barrel to .22 long rifle?—J. L. VINCENT, Aud, Mo.

Answer by Harold MacFarland: Three shops that do barrel relining are: Paul Pearson, 3944 North 40th Avenue, Omaha, Nebr.; Tom Mooney, 305 Sandhurst Drive, Dayton 5, Ohio; R. W. Kearfott, 624 Hall Street, Mamaroneck, N. Y.

You might also try one of these single-shot specialists: Vernor Gipson, Box 156, Salem, Ind.; Vaughn Cail, 123 Sheldon Terrace, New Haven, Conn.

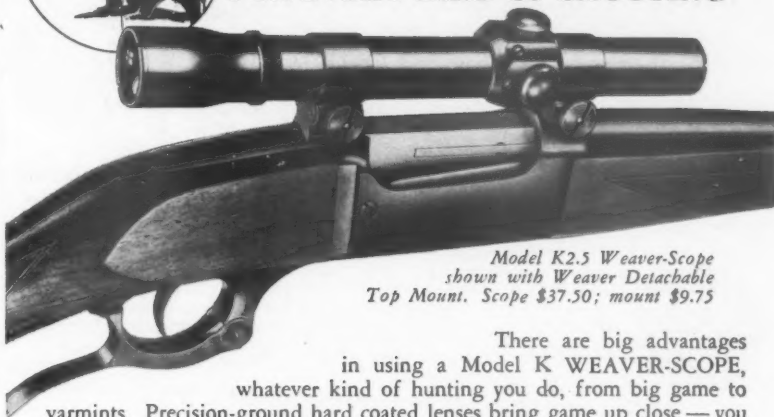
7 mm. EXPRESS WILDCAT

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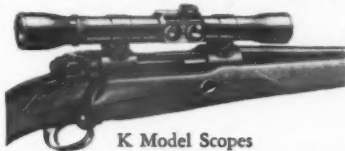


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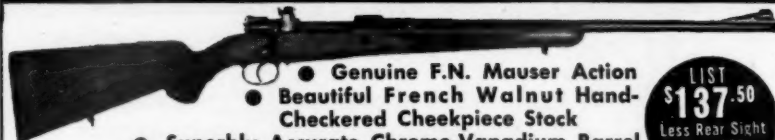
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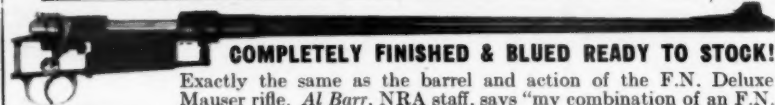
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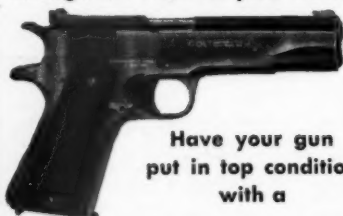
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ROBERT K. HAELIG LIFE MEMBER No. C.O.D.'s Dept. R, Bound Brook, New Jersey

to the number of wildcat cartridges in existence; occasionally one turns up which is somewhat outstanding. The 7 mm. Express, by Roy Gradle, 205 W. Islay Street, Santa Barbara, California, seems to be one of these cartridges. The main drawback is the .348 case used as a basis. The reason for necking the .348 case to 7 mm. caliber, turning off the rim, and cutting an extractor groove is the experience Mr. Gradle has had in his .30-348, which is the .348 necked to .30 caliber and used in the Model 71 Winchester lever-action rifle. For bolt-action rifles the .30-348 is made rimless in the same manner as the 7 mm. Express. The rimless .348 case has the same rim diameter as the .300 H&H Magnum, so one shell holder will work with both cases. The capacity of the case is 61 to 62 grains of 4350 powder. With 60 grains of 4350 powder and a 175-grain bullet the 7 mm. Express recorded 3,175 feet a second, and a check gave the same figure, as Roy Gradle did not believe the first one. The barrel has a 10-inch twist. Recently a rifle chambered for the 7 mm. Express went to Alaska, and we understand its performance was all that could be expected of it.

Some time ago we tried the 7 mm. Mashburn Magnum made by Mashburn Arms Company, 112 W. Grand Avenue, Oklahoma City, Oklahoma. It is based on the .300 H&H belted case and shortened to, I believe, the same length as the .30-06 case. The load tested was 60 grains of 4064 powder with a 160-grain bullet. Our experience with the 7 mm. Mashburn Magnum causes us to believe that Roy Gradle's enthusiasm about his 7 mm. Express is well founded. He claims very good accuracy and a very flat trajectory for such a heavy bullet. —AL BARR.

POOR MAN'S MOUSETRAP

Ever since seeing Berdon's alteration of the recoil spring guide, commonly called the "mouse trap", in the .45 automatic, I have admired the way this device takes up the slack prevalent to some extent in most .45 autos. However, bending the recoil spring so that it has a definite arch form will accomplish the same results. The spring is replaced with the high point of the arch uppermost, towards the barrel and top of the slide. It then bears against the barrel and, in the semi-compressed condition, forces the barrel to its maximum high position and causes the slide to ride the high side of the receiver ways.

Perhaps the point of pressure is not as favorable as in Berdon's alteration, but it does improve the performance of the pistol. The spring will not rotate out of position during firing, but in time the arch will fade and must be restored. The spring may be easily bent with the fingers, and the alteration does not cause any noticeable bending in the action of the gun.

In some of the late issue and commercial models the barrel fits fairly well in the bushing, but the fit of the bushing in the slide has been sloppy. Expanding the rear end of the bushing by holding some larger tapered object against it and tapping it with a hammer will improve the fit. The ball end of a small ball peen hammer will serve, but remember, a couple of taps too many and you will be in for some laborious hand fitting. These two alterations in conjunction with a little trigger pull refinement will

THE AMERICAN RIFLEMAN

go far toward improving the .45 automatic's performance, but they are not a substitute for a thorough accuracy job.—JOHN H. MURPHY, Saginaw, Michigan

SALVAGING WET POWDER

A small quantity of my powder (Government 4895) got wet in a recent flood. I would like some information on its performance after being air dried.—VIRGIL HART, Reno, Nev.

Answer by Phil Sharpe: It should be thoroughly air dried, out of the sun. This can be done by spreading a cloth—like an old sheet—over a sag-proof framework. You can borrow one of the house window screens for this purpose. Spread the powder thinly over the cloth and air dry it at normal room temperature for a day. If an electric fan is available, blow the air draft from underneath upward directed at the bottom of the sheet. At periodic intervals, stir the powder lightly with the fingers. When you are certain that it is thoroughly dry, seal it in a glass mason jar and use it, but do not mix with the good powder. I suggest that you do not attempt to use it for full charge loads.

While it is true that modern powder is non-hygroscopic, it should be noted that while the nitrocellulose grains cannot 'soak water', each grain is coated with DNT to slow its ignition rate and make it 'progressive burning'. This DNT is somewhat hygroscopic, and while this is greatly reduced by the glazing of powdered graphite, here is where some trouble can occur. If the powder appears to be in good shape, I would not hesitate to use it, but keep it separate, and use it first.

IMR No. 4895, Lot 2425

Earlier this year in the Dope Bag (February) we listed data on lots of IMR No. 4895 powder with which we were already familiar; 27272, 27277, and 27278, all of which are similar in burning characteristics and much like IMR No. 3031 powder. One more lot, 2425, has recently been added. 2425 is a slightly slower burning lot than the other three. For comparison, the loading data for 2425 is listed with the only three other lots for which we have this specific information.—AL BARR

IMR POWDER NO. 4895, LOT 2425

Bullet (caliber) (30-06)	Powder charge (grains)	Lot No.	Velocity (at 78 ft.)	Pressure (Pounds per square inch)
166-gr. O.P.	49.5	27272	2,713	48,860
166-gr. O.P.	49.8	27277	2,713	47,470
166-gr. O.P.	49.6	27278	2,718	47,160
166-gr. O.P.	50.1	2425	2,705	47,230

ACCURIZING REMINGTON 722

My Remington 722 rifle in .222 caliber, as received from factory, shot about two-inch groups from a benchrest at 100 yards. After considerable work and many hours on the range, I made the following changes. Enough wood was removed to set barrel completely free.

Receiver screws were set finger tight. With screws drawn up very tight the rifle shot vertical strings 2 to 3 inches long.

Wood was removed from under bolt handle to give metal to metal contact be-

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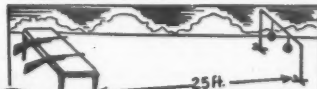
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by "Jock" Williams

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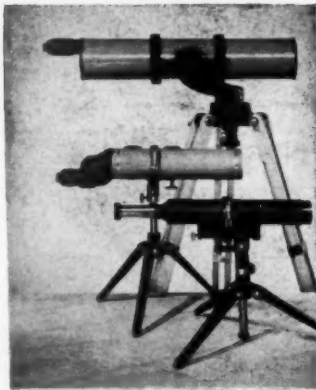
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tween the bolt handle and the receiver.

After these alterations the diameters between centers of five consecutive groups of three shots each were: .105", .85", .28", .82", and .37-inch. The groups were fired from a benchrest at 100 yards with Remington 50-grain factory loads. The rifle is scoped with an 8 power Unertl Varmint Scope—GEORGE A. KEMENY, Pittsburgh, Pennsylvania.

WHITNEYVILLE RIFLE

I recently fell heir to a Whitneyville lever action rifle of .44-40 caliber. Is it possible to shoot low power factory revolver ammunition in it or should I shoot only blackpowder loads?—JAMES HARRIS, Los Angeles, Calif.

Answer by Phil Sharpe: That old Whitneyville is a blackpowder gun, and will not be safe for use with any modern smokeless powder. You have one of the few remaining Kennedy repeating rifles made by the old Whitney Arms Company, and first produced about 1884. Not many of these were made.

REMOVING EARS FROM ENFIELD

How can I remove the ears from an Enfield action? Does the Lyman 48WJS fit the Enfield? What kind of a peep sight do you think is best for hunting? It should be rather economical and easy to install on the Enfield.—JERRY MCGOWAN, Pilot Rock, Oregon.

Answer by Harold MacFarland: The average Enfield receiver is too hard to cut with a hacksaw or file, so the usual method of getting the ears off is to use a bench grinder. This is the amateur method, and the amateur ends up with as many different shapes on his Enfields as there are amateurs. The Enfield receiver bridge, or ears, should be ground to exactly the same radius or curve as the receiver ring at the opposite end of the bolt. Aside from aesthetic reasons, you are going to have difficulty fitting a peep sight or a scope mount on the gun unless this is done.

The gunsmith will rough the ears off with a power bench grinder and then finish grinding to a true precision radius with the tool post grinder on the lathe; or he will rig a special fixture in front of his bench grinder which allows the receiver to be rotated at a fixed distance from the grinder. Unless you have the proper tools for this job, I would advise sending it to a competent gunsmith for the job. He will charge about \$6.00. First, make sure he will give you a precision radius. Even some large shops grind these receivers by guess.

The Lyman 48 is a good target sight. For a hunting rifle, I like the Lyman 57 SME.

.300 MAGNUM BULLETS

Are the .30 caliber 180-grain soft point bullets made by the Modern Gun Shop suitable for use in the .300 Magnum?—G. C. VALENTINE, c/o A.P.O. San Francisco, Calif.

Answer by Al Barr: Modern Gun Shop bullets are made of copper tubing. They are tough, durable, and should withstand the .300 Magnum velocity. These bullets should be suitable for use on most big game.

DCM PRIMERS IN .220

Will the DCM .30-caliber primers per-

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.219 DONALDSON
.250 DONALDSON

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form properly in my Weatherby Rocket?—S. P. Oscood, Rockland, Mass.

Answer by Phil Sharpe: The primers sold by the DCM are the standard corrosive primer No. 26 with the FA 70 mixture. These should be entirely satisfactory for your Weatherby, but you must remember that the gun will need a thorough cleaning with soap and water after use.

GUNSMITH TRADE DOPE

Sports, Inc., 5501 N. Broadway, Chicago 40, Illinois, have for some time been featuring Franzeite rifle and pistol grips molded from a tough, durable plastic composition. These are available either plain, checkered or carved for most makes and models of pistols and revolvers made in this country, and for most of the popular foreign models. New price list by Sports, Inc., lists all styles with prices. Grips are available in target models including thumb rest.

Williams Brothers Gun Shop, 1454 Mendocino Ave., Santa Rosa, California, has been opened by Howard and Dal Williams, both of whom spent three and one-half years at the Lassen Junior College, Susanville, California, completing the course in gunsmithing. They emphasize custom gunstock work and rebarreling to most standard calibers. The work done by the Williams brothers which we have seen appears to be quite good.

H. G. Baucher, 1051 Webster, Kansas City, Missouri, has turned out the best bullet we have yet seen for big bear and other heavy game in the .375 Magnum. Cannelured, round soft-nose bullet has small lead exposure and thick jacket, weighs 350-grains. Very uniform in diameter and weight, accuracy tests we fired at 100 yards showed most bullets cutting into each other. This heavy bullet can be driven at about 2400 feet per second in the .375 Magnum which is fast enough when penetration is wanted and also needed.

G. T. Smiley Company, P.O. Box 54, Clipper Gap, California, has announced a price reduction for the Model 510 Case Trimmer, which originally sold for \$15.00. The trimmer now is available complete for \$10.00 including pilots for .22, .25, and .30 caliber cases. Included with this popular case trimmer is a case holder which will handle all three sizes of cases.

Gerald O. Kelver tells us that his new book, *Ned Roberts and the Schuetzen Rifle*, will be published in September, 1951.

The book will contain reprints of articles by Ned Roberts and other authorities discussing schuetzen and other single shot rifles.

Approximately 110 pages, with illustrations on enameled paper, the book will sell for \$2.00 until September 15. After publication the price will be \$3.00. Pre-publication purchase may be made through George O. Kelver, Box 49, Osceola, Indiana.

Bullet puller made by Johnson's Rifle Clinic of Corpus Christi, Texas, was recently described as a 4-hole bullet puller for as many different calibers. Actually the puller is made up for three different bullets. Also, the bullet puller now can be made to take care of the shorter cartridges, and bullets may be pulled conveniently without marring

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Wilson Case Trimmer—\$12.00; Primer Pocket Reamer—\$4.50
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Pistol kit for four handguns plus the usual range accessories is offered by National Shooters Supply, Inc., 3609 14th Street N.W., Washington 10, D. C.

This attractive kit is of wood construction finished in walnut color and thoroughly waterproofed inside and out. It has rabbit-proof construction, is put together with waterproof glue, and has a good stout solid brass full-length piano hinge together with brass hasp and staple for small padlock.

Inside is 15 inches long by 7 inches wide. Priced at \$17.50, kit is designed to be easy on the shooter's pocketbook.

Armasolv is an improved firearms cleaner and rust preventive produced by the J. A. Gaines Company, 1910 Harris Ave., Anniston, Alabama. Armasolv is a thin, penetrating, nongumming liquid designed to serve as a powder solvent, and at least help retard the action of corrosive primer residue, but so far extensive tests haven't been made to assure that all the corrosive residue will be removed. Armasolv is prepared in 3-ounce oval cans. The preparation does a good cleaning job and provides a thin protective film on metal parts.

Cline Gun Swivel Adapters for attaching slings to magazine tubes of Winchester and Marlin lever action rifles are now being handled by Automatic Screw Machine Products, 3017 S.E. Park Avenue, Portland 22, Oregon.

Large round-head safety to fit all Model 12 Winchester shotguns, available in both left- and right-hand styles are featured by L. H. Brown of Kalispell, Montana. The ends of the safety, which replace the original factory sights, are hand checkered and case hardened in colors. This safety is easily installed in a few seconds and the price postpaid is only \$2.50. The large round head of the safety minimizes the possibility of fumbling the safety, even with gloves on.

Handy 6-ounce aerosol type container for the excellent Gun Guard Gun and Reel Oil is now available through the Mitchell-Bradford Chemical Company, Stratford, Connecticut. The original can held 12 ounces of Gun Guard oil. The smaller container provides a handier and smaller size for the shooter's and fisherman's kit. Ready for instant use, merely pushing a button on top of the aerosol can, produces a fine spray of polarized Gun Guard Gun and Reel Oil.

Extra wide field, "palm of the hand sized." 6 power 25 mm. binocular called the Bushnell Broadfield. These imported glasses have coated optics, weigh 12 ounces, and have a most unusually wide field of view. Bushnell gives all his glasses a critical inspection before he sells. \$44.50 plus tax.

BOOK REVIEWS

UNITED STATES MILITARY MUSKETS, RIFLE, CARBINES, AND THEIR CURRENT PRICES

By Martin Rywell

The idea behind this small pamphlet is admirable. It seeks to present the collector of military long arms with a compact and inexpensive guide to the identification and value of the guns in his field. Unfortunately the attempt is unsuccessful.

The identification of specimens is based almost entirely on a table of measurements. This system is certainly concise, but it does not provide the data necessary for the proper identification of a piece. The much more important aspects of shapes and materials are entirely neglected. How many collectors, for instance, would attempt to identify a model 1816 Springfield musket by the length of its barrel and lockplate instead of looking for the brass pan and the characteristic shape of the lock? The value of each piece is given at the end of its line on the chart. No indication of the effect of condition is given, but apparently each gun is assumed to be fine. In general, the prices seem to be in line although perhaps a trifle high in some instances. This chart might well be useful to the experienced collector who already knows his guns and wants a compact guide to current prices. The beginner, however, would probably be mystified.

In addition to the chart, there are sections entitled "Firearms in American History", "History of Firearms at a Glance", and a "Dictionary of Firearms Terms". These sections contain the main causes for criticism, being full of folklore in the guise of history and absolutely erroneous statements. Typical of such errors are the description of a snaphaunce mechanism in which the steel strikes the flint or pyrites; the statement that Thomas Harriot was the first white man to draw a picture in America; the oft-repeated assertion that the Revolutionary War caused a revolution in weapons and tactics; and the theory that Lancaster County was the logical place for the birth of the Kentucky rifle because it was at the forks of the Ohio and the gateway to the interior of the country. The last is not only faulty logic, but it also moves Lancaster County all the way across the state of Pennsylvania.—H. L. PETERSON. (46 pages, 12 plates, paper cover. Published by Pioneer Press, Harriman, Tennessee, 1951. Price, \$1.00.)

HANDBOOK OF CONFEDERATE SWORDS

By William A. Albaugh, III, and Richard D. Steuart

For a subject in which there has been so much general interest, unusually little has been written about Confederate swords. This booklet, therefore, is a welcome beginning. It is not a definitive study, and its authors make no claim that it is, modestly describing it as 'a starting point for those that follow'. It is, however, a series of drawings and descriptions of Confederate swords by two men who have probably handled more such specimens than any other person in the United States.

the RUGER Mark I TARGET MODEL

Needs no accurizing

price:

\$57.50

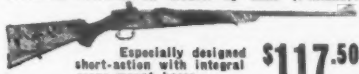
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STURM RUGER & CO., INC., SOUTHPORT, CONN.



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Especially designed short-action with integral scope-mount bases. **\$117.50**
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Dual-range peep and hooded-ramp front sight.
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New! 9mm Luger Pistol Ammo by Sako. The World's Finest! Non-Mercuric, Non-Corrosive, Oil-proof, Gilding-Metal Full Jacketed Bullets. List—\$9.80 per 100 rounds.

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Give make, model, gauge or caliber and over-all length of gun.	

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NICHOLS SPORTING GOODS
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YOUR GUNSMITH says:
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FIENDOIL
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If fish wore sun glasses would they bite?

by Ray Ban



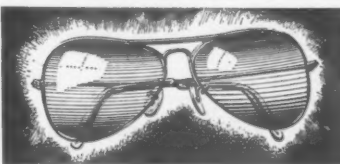
I have heard about the fish that shows up with the plug in his mouth that you lost two years ago, and the fish that brings along a new \$18 steel rod and a \$32.50 reel. But I never heard yet about a 3½ lb. small mouth black bass wearing sun glasses.



I think the reason I never heard about this is that any 3½ lb. s. m. b. b. who wore sun glasses would get such a good look at the bait that he would never bite. That is, if they were Ray-Ban Sun Glasses with "Gradient Density."



This is an idea that somebody should have thought of before but didn't. "Gradient Density" is graduated to screen out sky and water glare. The light that comes through is soft, cool, and comfortable. Free from the "eye wreckers"...harsh glare, and invisible ultra-violet and infra-red. No interference with colors...a chipped yellow plug still looks yellow, and still needs repainting.



These glasses are made by Bausch & Lomb of finest optical glass, ground and polished. One warning... be sure you get genuine Ray-Ban Sun Glasses. So darn many imitations around that we've put the name RAY-BAN real plain on the nose piece on the frame. They'll add as much to your fishing comfort as a dry boat. Cost less than a good reel. Get yours today and see what you've been missing!

Ray-Ban lenses may be ground to prescription. Consult your optometrist, optician, ophthalmologist.

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REAL GLARE PROTECTION

Bausch & Lomb Optical Co., Rochester, N. Y.

GUN Bargains!

**BUY THEM!
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BRITISH ENFIELD
#303
SPORTER



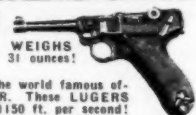
\$49.50
INCLUDING
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Ni-Powered precision 6 shot bolt action. #303 British ENFIELD repeater CONVERTED by expert gunsmiths into a Stream-lined SPORT MODEL. Walnut stock. 26" barrel. Blade foresight and aperture rear sight. Its smooth action, ballistical properties and 8 1/2 lb. weight makes it an ideal hunting rifle. Now selling this Ni-Powered proof tested SPORTER at a fraction of what it will cost this fall. #303 Enfield Ammunition made by Remington 215 Grain. Express soft point. Shells permit reloading and using innumerable times.

.303 ENFIELD \$34.50

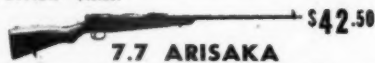
Same as above, except it is the Military model, as issued. Condition "Very Good."
Uses .303 British ammunition made in U.S.A. by Remington Arms Corp.

9 MM LUGER
GERMAN AUTO.
\$39.50



WEIGHS
31 ounces!

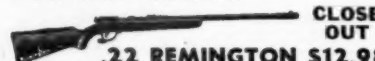
"Very Good" condition. The world famous official German Army LUGER. These LUGERS have a Muzzle Velocity of 1150 ft. per second! Striking energy is 365 foot pounds! They have fixed sights and special safety features. Overall length 8 1/2". Proof tested. 8-cartridge magazine. Ammunition available anywhere (German and American made). SAME MODEL "EXCELLENT CONDITION" \$49.50.



7.7 ARISAKA

Converted to .300 Caliber Savage

Early manufacture! Condition about "Very Good." 25" barrel. Weigh 7 lbs! Powerful, accurate. 5 Shot Arisaka Bolt Action rifles converted to .300 Savage. Proof tested. fired with overload! Made for use with pointed bullets. Suggest pointed or semi-pointed (Winchester or Western Silvertip bullets preferred) as some hollow point or flat nose ammunition will not feed satisfactorily. SPORTER length. Military sights. Bolt handle bent down. New sling and swivel. While 30 last!



.22 REMINGTON

Model 514A chambered for .22 short, .22 long and .22 long rifle cartridges, interchangeable standard or higher speed velocity. Adjustable rear sight. Flat integral bead front sight. Special safety features. Full size. One piece pistol grip stock genuine walnut. 42" length. weighs 5 1/2 lbs. Brand new. Regular price \$16.10.

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Brand new. Manufacturers surplus. Semi-pistol grip, regulation type military stocks for 30.06 Springfield Military rifles. Machine inletted, not completely finished. Sturdy top quality walnut.

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Perfectly balanced. Stream-lined. The SPORT model with 6-inch barrel. Does double duty as target pistol as well as general outdoor use. Overall length 9". weighs 27 oz. \$46.50. The TARGET model has 7 1/2 inch barrel, length overall 10" and weighs 29 oz. \$49.75. Both have blued finishes and sights are adjustable for windage and elevation. Magazine capacities 10 cartridges. Take .22 long rifle, regular or high velocity. Both have full hand grip and thumb rest stocks. TRULY SUPERB CRAFTSMANSHIP.

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SAISFACTION
GUARANTEE

.455
WEBLEY
\$29.50



Very
Good
Condition

Made by WEBLEY of England, supplier to the British Government War Dept., Air Force, Navy and major Police Depts. Recently proof tested. W.H.B. Smith in the NRA's book "Small Arms of the World" states "One of the finest heavy duty hand weapons ever made. Permits opening and extracting cartridges with one movement of the hand." These revolvers TRIPLE lock cylinder during firing. Truly a fine value for \$29.50. F.O.B. Chicago. Same model "Excellent Condition"—\$34.50. No. C.O.D.'s please. Ammunition plentiful. Use any .450 or .455 Revolver ammunition suitable for Colt or S & W revolver (not automatic). Or we can supply Smokeless, Non-Corrosive 265 Grain Box of 50 for \$5.35.

.25 PIEPER POCKET
AUTOMATIC—\$39.75



Featherweight! Compact PIEPER (Belgium made) for THIRTY years has maintained reputation for RELIABLE, strong, properly designed arms. Double safety with "squeezer". 2 1/2" barrel. Overall 4". weighs 12 oz. Fixed sight. Blued finish. Hammerless design is universally preferred.

SMALLEST .22 AUTO. MADE \$35.00

.22 VB Baby Automatic Bernadelli. Meets sportsmen's demand for Pocket Automatic using .22 LONG cartridges, packs a punch! Easy to carry. Weighs 9 oz. 6 shot. 2 1/2" barrel. 4 1/2" overall. Blued. Non-projecting sights. Similar to above Pieper picture. Delivery July 25th.

BERNADELLI AUTO. PISTOLS
.32—\$45. .380—\$48

Bernadelli V.B. Automatics are truly top quality. Similar to above illustration. Magazine. .32—8 shot. .380—7 shot. 3 1/2" barrel. 6 1/2" overall. Weigh 25 oz. each. Non-projecting Sights. Blued finish. Positive thumb Safety Magazine disconnector safety.

LLAMA AUTO. PISTOLS

.32—\$46.00 .380—\$48.00
9mm Luger—\$48.00



Famous Llama pistols, product of one of Europe's oldest, most reliable arms manufacturers. Postwar Spanish arms production is second to none in design, materials, finish, accuracy and dependability. Wide square sights. Disassemble without tools. Have checked genuine walnut grips and hand honed and grooved triggers for smooth even pull.

Specifications

	.32	.380	9MM
Mag. Capacity	8	7	8
Weight	21 oz.	20 oz.	31 oz.
Height	4 1/2"	4 1/2"	5"
Length	6 1/2"	6 1/2"	7 1/2"
Width	1 1/2"	1 1/2"	1-3/16"
Barrel length	3-11/16"	3-11/16"	4-13/16"
Penetration in pine at 17 yds.	3"	2 1/2"	3 1/2" (30 yds.)
Sights	Patridge Grip & Manual	Patridge Grip & Manual	Patridge Manual
Safety			

UNITED ARMS GUARANTEE

If you are not absolutely satisfied in every way return gun within 5 days for a full unquestioned refund of your money. RIFLE cash orders shipped prepaid. C.O.D.'s include \$5.00 deposit. HAND-GUNS are all shipped F.O.B. Chicago and C.O.D. orders cannot be accepted. In ordering firearms you must state in your order you are not a minor, alien, fugitive from justice, under indictment or been convicted of a crime of violence. NONE SOLD TO MINORS!

The book is composed of a general introduction by Steuart, followed by a series of drawings and descriptions of individual swords principally by Albaugh. Since Albaugh is not a trained artist, many of the hilts are somewhat distorted through faulty perspective. Nevertheless, they are entirely adequate for the purpose. In all, some 54 swords are illustrated and described, making a volume well worth the price.—H. L. PETERSON. (128 pages, 54 plates, paper covers. Published by the Pioneer Press, Harriman, Tennessee, 1951. Price, \$2.00.)

THE ULTIMATE IN RIFLE PRECISION

The 1951 Bench Rest Shooter's Annual Edited by Colonel Townsend Whelen

In the last several years bench rest shooters have accomplished a veritable revolution in rifle accuracy. They have come very close indeed to fulfilling the rifleman's dream of all shots in one hole. They pretty regularly expect 5-shot groups at 100 yards to be a quarter of an inch or less from center to center of the widest shots, and ten-shot groups at 200 yards have come close to equalling Rowland's famous machine rest group of just less than three-fourths of an inch.

How this is done is of great importance to everyone interested in rifle accuracy, and, fortunately, the bench rest clan generously have made their methods known to the shooters of the world through the publication of their annuals, starting in 1949. The current 1951 issue is bigger, better and more informative than the preceding two.

It contains 372 pages of usable, vital information, and many photographs, drawings, and line cuts. The book starts off with a short history of Bench Rest Shooting, followed by sections or articles on the construction of the benchrest, the technique of benchrest shooting, benchrest targets, and how to measure them, procedure in competition, how to conduct a benchrest tournament, etc.

The 216 page technical section covers a number of such interesting and informative subjects as the Benchrest Rifle, Barrel Making, Barrel Lapping, Stocks and Bedding, the Telescopic Sight, Bullet Making Tools and Technique, Methods of Handloading for Ultimate Accuracy, etc., followed by a full discussion of thirty-two of the cartridges best suited for benchrest work.

There are about twenty pages of statistics giving previous scores and particulars of the equipment used. In the back of the book there is a very fine directory of firms and individual gunsmiths catering to the wants and needs of the benchrest and other shooters.

Contributors to the book include, in alphabetical order, the following well known names: Ray Biehler, Edwards Brown, Samuel Clark, Jr., Cline Deere, Harvey A. Donelson, G. R. Douglas, Thomas E. Higgins, Joel G. Hodge, Frank E. Hubbard, Gene Hudgins, Roy S. Leon, Roy E. Meister, C. H. Morse, Herb Thackrah, Roy Vail, M. H. Walker, Townsend Whelen, and L. E. Wilson.

The book is full of very fine information, and is indispensable to every shooter who wants to know what make things tick.

(372 pages, cloth bound, \$6.00. Published by Sportsman's Press, Washington, D. C. Available through NRA Book Service)

THE AMERICAN RIFLEMAN

THE ARMS CHEST

GENERAL REQUIREMENTS APPLICABLE TO CLASSIFIED ADVERTISING

1. **Rates:** 25 cents per word including name and address—minimum charge \$3.00. Advertisements must be accompanied by remittance, addressed to "The Arms Chest," American Rifleman, made payable to "National Rifle Association"—1600 Rhode Island Ave., Washington 6, D. C. Insertion will not be made until payment is received.

2. **Closing Date:** All advertisements must be received with advance payment by not later than the 1st of the month preceding date of issue. (Example: July 1st for the Aug. issue. Ads received after July 1st and not later than Aug. 1st will be inserted in the Sept. issue.)

3. **All Ads Subject to These Conditions:** We reserve the right to edit all copy to conform with our standards and to reject or discontinue any advertisement which we consider undesirable.

4. **Transactions Based on Good Faith:** Deliberate misrepresentation, or violation of the codes of good sportsmanship and good business ethics, will constitute grounds for refusal of advertising, and may result in disbarment from N.R.A. membership.

5. **Blind Ads Not Acceptable:** Blind ads, with box numbers only, will not be accepted. Give your COMPLETE name and address, to insure prompt and certain delivery of all mail or telegraph replies.

NOTE: Postal authorities no longer are required to provide directory service for even first-class mail which does not carry a complete local address!

6. **How to Count Numerals, Etc.:** Groups of figures are counted as one word (example: 30-30,

250-3000, \$150.00, \$1.50). Abbreviations consisting of initials or single characters are counted as one word (example: W. H. Smith (W. H. counts as one word); H. B., meaning heavy barrel, etc.; W. H. and H. B. are one word) Hyphenated words are counted as two words (example: 20-gauge, pearl-handled, no-slip).

7. **No Responsibility for Illegible Copy:** The publishers are not responsible for errors in printing advertisements, due to illegible copy; type or print clearly all ads.

8. **All Articles to Be Properly Described:** To avoid misunderstandings the condition of every advertised article should be described in accordance with the following definitions, NEW—not previously sold at retail, in same condition as current factory production; NEW—DISCONTINUED—same as NEW, but discontinued model. The following definitions will apply to all SECOND-HAND articles: PERFECT—in new condition, in every respect; EXCELLENT—new condition, used but little, no noticeable marring of wood or metal, bluing perfect (except at muzzle or sharp edges); VERY GOOD—in perfect working condition, no appreciable wear on working surfaces, no corrosion or pitting, only minor surface dents or scratches; GOOD—in safe working condition, minor wear on working surfaces, no broken parts, no corrosion or pitting that will interfere with proper functioning; FAIR—in safe working condition but well worn, perhaps requiring replacement of minor parts or adjustments which should be indicated in advertisement, no rust but may have corrosion pits which do not render article unsafe or inoperable; POOR—badly worn, perhaps requiring

major adjustments or repairs to place in operating condition.

9. **WARNING TO PURCHASERS:** The publishers will accept no responsibility for any unsatisfactory transaction involving articles which have not been described in accordance with the foregoing NRA standards. Purchasers or traders should therefore insist that sellers give clear descriptions of all articles, in accordance with these standards—before any transactions are consummated. Purchasers should also request shipment by express C.O.D., with examination privileges; the purchaser may (and should) then examine the shipment in his local express office—if unsatisfactory the article will then be returned by the express company to the shipper, at the latter's expense.

10. **The National Firearms Act** forbids the sale of the following: (a.) Full automatic machine guns. (b.) Rifles and shotguns with barrels less than 18 inches in length or 16 inches in the case of a weapon of .22 or smaller caliber. (c.) Handguns such as the Mauser or Luger automatic pistols, when such weapons are equipped with detachable butt stocks, except that all of the above may be sold by a Federal licensed dealer who has paid the special tax required by Section 3260, Internal Revenue Code.

NOTE—"Barrel length", as it applies to the above, is determined by the insertion of a cleaning rod from the muzzle until it comes to rest against the face of the closed breech.

11. **Fair Trade Laws:** Advertising will not be accepted for articles to be sold in violation of Fair Trade laws, after the manufacturer has advised the NRA that such violation exists.

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ATTENTION SHOOTERS! WILLIAMS ARE manufacturers of the finest in precision shooting equipment: Floodproof Receiver Sights, Quick Connect Hood and Hoodless Ramp Front Sights, Guide Sling Straps (plain and hand-carved), Standard Sling Swivels, Slot Blanks, Open Sight Bases, White Center Dial Scoring Targets, Screw and Sight Assortments, Standard Gunsmithing Screws, William's Gun Oil, Stock Finish, Bore Cleaner and Walnut Stain and Filler. Write for literature. Complete catalog 25c. Address inquiries to: Williams Gun Shop, 7387 Lapeer Road, Davison, Michigan.

BIG CATALOG, ANTIQUE GUNS, \$1.00. 475 photographs. Satisfaction guaranteed. G. B. Hebard, Knoxville, Illinois.

HOLLAND LIGHT-WEIGHT MAGAZINES \$10.50. R. Vail, Warwick, N. Y.

WRIST WATCHES, U.S. AIR CORPS, WAL- tham, 16-jewel, Water and Shock proof, stainless steel case. Reconditioned. Value \$55.00. Special \$17.95. Public Sport Shops, 11 S. 16th Street, Philadelphia 2, Pa.

NAVY OXFORDS, GENUINE U.S. SURPLUS, finest black calfskin, famous makes, specify size, \$7.95. Check or Money Order. (Add 50c for postage and handling.) AR Rudolph's, Atchison, Kansas.

ANTIQUÉ FIREARMS, ACCESSORIES AND parts. All illustrated lists for a year, \$1.00. Weisz, 100 South Uhle St., Arlington, Virginia.

190-PAGE PROFUSELY ILLUSTRATED CATALOG crammed with antique and modern pistol, sword, dagger, etc. values sent on receipt of 50c. Robert Abels, R860 Lexington Ave., New York 21.

LARGEST AND FINEST STOCK OF COLLECTORS' ARMS in America. Visit our shop or write us your wants. The House of Guns, Morris Plains, N. J.

ITHACA #4 DOUBLE 16-GAUGE 28" improved and modified. New Miller Selective Single Trigger, new full Beavertail interchangeable fore-end. Extra beautiful wood throughout, excellent condition. Sell \$350.00. William G. Hoffend, Box 1204, Rochester 3, N. Y.

8 M/M NAMBU PISTOL AMMUNITION (50) \$6.50. .35 Winchester 1895, factory soft points, (20) \$5.00. 8 m/m Mauser, \$3.85. 6.5 Jap soft points, (Custom) \$4.25. 6.5 Italian, \$4.75. .256 Newton or 7.7 Jap soft points, \$3.50. .38-56, 40-60, 45-60, 40-65 Winchester, black powder, lead, \$3.75. .38-56 soft points, \$4.25. Send dime for complete list of guns and ammunition. Central Sports, Delphos 2, Ohio.

FREE COPY OF AMERICA'S LARGEST GUN list. Published monthly. Write—Shotgun News, Columbus, Nebraska.

GOVT. SURPLUS GOGGLES WITH RUBBER frames for industrial use, all sports, skiing, automobilists and motorcyclists. Complete with polarizing lens. Value \$4.50—Special \$1.29. Public Sport Shops, 11 S. 16th Street, Philadelphia 2, Pa.

PERCUSSION COLT AND REMINGTON parts. Flint and percussion locks. List 25c. C. H. Weisz, 100 South Uhle Street, Arlington, Virginia.

COLT MAGAZINES FOR ACE AND .22 CON- version Unit \$4.95; Barrels for 1911 Colt .45 Automatic \$4.95; Barrels for Model 1917 Smith & Wesson .45 caliber \$5.95; Barrels for Colt Single Action .38/40, 7 1/2" \$9.95. All Factory New. Barrels for M1 Carbine .30 caliber. New inside \$7.00. Hudson, R-52 Warren Street, New York 7, N. Y.

VARMINT GAME BENCH REST TARGETS Crows, Chucks, Jack Rabbits, etc. 27 different 6x9 and 9x12-inch Long Targets Postpaid \$1.00. Clear printed, well designed, on Bond Paper. Free with order 100 Chucks or Bench Rest. Send your order now. Satisfaction Guaranteed. New Trenton Targets, P.O. Box 51, Cincinnati 5, Ohio.

LARGE COLLECTION OF AMERICAN AND European antique arms. Send 25c in coin for our 18th catalog. We buy whole collections or single pieces. Fair prices paid. Kimball Arms Company, Woburn, Mass.

BACK NUMBERS OF "THE GUN COLLECTOR" Magazine. 15 issues, Nos. 21 to 35, will bind into book of 480 pages—\$7.50. For good reading at bargain prices—5 back numbers—our choice—not necessarily consecutive—\$1.50. Subscription to next 12 issues—\$4.00. The Gun Collector Magazine, Box 89, Whitewater 5, Wisconsin.

PARKER GH 12X32 MAGNUM WEIGHT 8 1/4 pounds. Parker G.H.E. 12x30 autoejectors. Each \$185.00. Both excellent. Inspection privilege. Rodney Day, Haverford, Pa.

RIFLES, WIN. MODEL 70, NEW, IN CALS. .30-06, .270, .220 Swift, .257 Roberts, 300 H&H Magnum, \$126.50. Immediate Delivery. Public Sport Shops, 11 S. 16th Street, Philadelphia 2, Pa.

GARAND, CARBINE, ENFIELD. SPRING- field parts. No lists. State your wants. Enclose stamp for reply. Greeley's Gun Shop, 448 Pompton Ave., Cedar Grove, N. J.

SHELLS. WE MAKE THEM ALL. SEND for list. Gust Custom Loading, 3155—40th Ave. South, Minneapolis, Minnesota.

FLEXIBLE SHAFT TOOL BY FAIRCHILD for grinding, polishing, sanding, buffing, carving. Original price, \$19.95. While they last! Special price \$12.95. Public Sport Shops, 11 S. 16th Street, Philadelphia 2, Pa.

WINCHESTER STOCKS FOR 97 MODEL, 12 gauge with checkered steel butt plate, New, \$3.95; M1 Carbine stocks, Assembly New, \$3.75. Hudson Sporting Goods Company, R-52 Warren Street, New York 7.

Are YOU Ready for the Hunting Season?

Do your guns need repairing, or rebluing?

Planning on new sights, a top-quality scope, better scope mounts, a Polyochoke, Cutts Comp or Power-Pac?

Right now your favorite gunsmith is in a much better position to give you prompt service on your special needs, than he will be later on in the hunting season.

So get out your gun, now, and let your gunsmith get to work on it while he still has time to do a leisurely job, exactly the way you want it!



P.S. If you have any extra deer rifles, duck guns or other excess hunting supplies, an ad in the September 'Arms Chest' will move them for you quickly—and profitably.



Your ad "copy" for the September issue must reach us, with remittance, not later than August 1st.

REDFIELD

MICROMETER

RECEIVER SIGHTS



Finest receiver sight you can put on your rifle. Accurate, rugged, dependable. Unequaled in quality and workmanship. Folder sent on request. Give make and model of rifle.

REDFIELD Sourdough FRONT SIGHT

Most nearly perfect all-around front sight ever developed. Gold face sets at 45 degree angle, shows plainly in poorest light. Partridge type.

REDFIELD GUNSIGHT CO • 3313 Gilpin St., Denver, Colorado

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Work Unconditionally Guaranteed
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Complete Stock of Loading Supplies

25¢ for Illustrated Catalogue

5239 North Fifth St. Philadelphia 20, Penna.

GUN CASES, TERRIFIC VALUE, FULL length Suedelike finish, soft fleecy-lined, weather-proof. Have models for most any rifle, or shotgun (state type gun). Sent Prepaid for only \$1.69. Goodwear "Brooklyn's Great Gun Exchange", 177 Flatbush Ave., Brooklyn (17), N. Y.

FABRIQUE NATIONALE DELUXE RIFLES. The finest in hand-fitted and hand-finished rifles. For the discriminating shooter who wants the best. "Randall" 100% handmade knives. The world's finest, "Hensoldt" scopes and Roof Prism binoculars. Life Member. Sam Friedman, 782 Pelham Parkway, New York City.

POLARIZED GREEN FILTER SUN SHADES for 7x30 and 6x30 binoculars, value \$5.50. While they last—\$1.50 per pair. Public Sport Shops, 11 S. 16th Street, Philadelphia 2, Pa.

BULLET TRAPS—SAFE AND EFFICIENT with .22 caliber L.R. and all hand guns including .45 caliber. Full 16x16" opening. Complete with removable legs, \$25.00 F.O.B. factory. Freight shipping weight 65 pounds. Please send check or Money Order. Wire Rope Products Co., Winsor Ave., Hamilton, Rhode Island.

THOSE WHO HAVE NOT NOTICED MY Frontier Colt rebuilding special on your gun—(February Rifleman P. 81) Please Note. Your S. A. Colt Rebuilt, tuned up, action handhoned, frame recase-hardened in colors—gun beautifully blued—only \$18.50. We're swamped with work—and best we can promise is one month delivery. Parts replaced at standard prices—take heed while they last. Am specializing in restoring antique firearms and every other type of gunsmithing—Prices reasonable—work guaranteed. Ed. Agramonte, 201 Warburton, Yonkers, N. Y.

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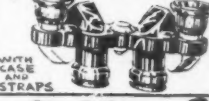
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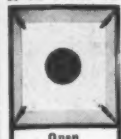
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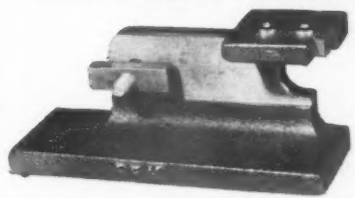
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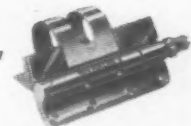
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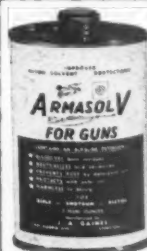
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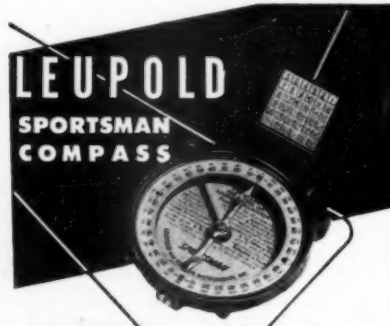
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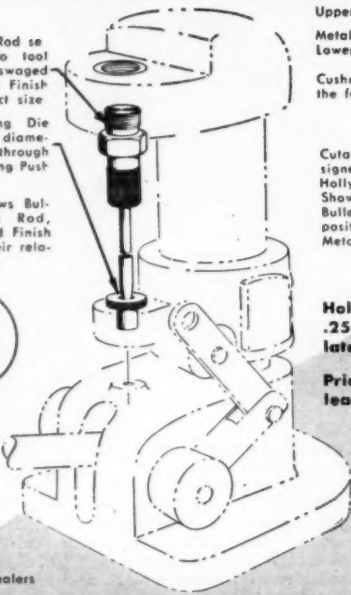
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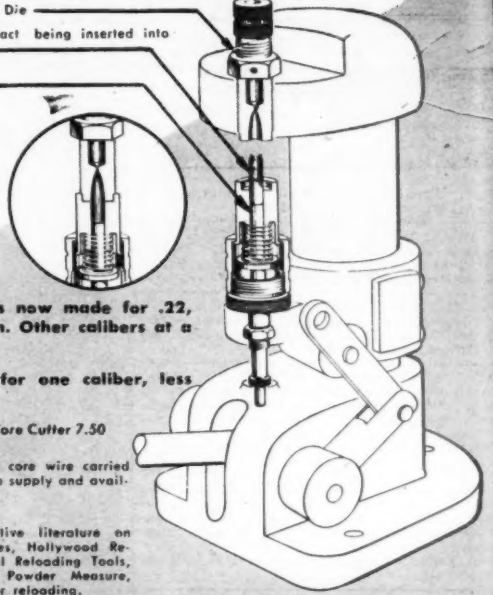


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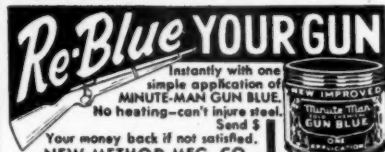
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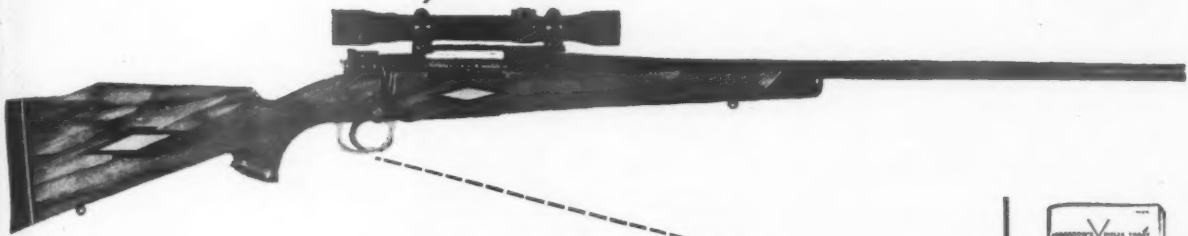
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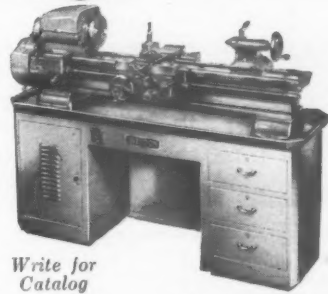
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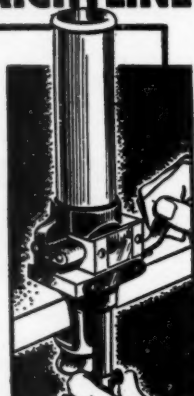
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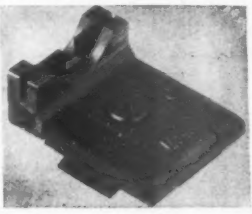
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Win. 75 Target Rifle complete	65.25
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Rem. 37 Match Rifle, Rem. rear, Redfield front, sling	136.95
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Rem. 37 Redfield Olympic Sights	150.60
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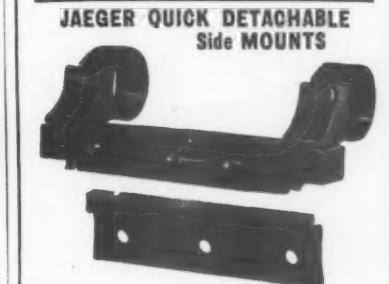
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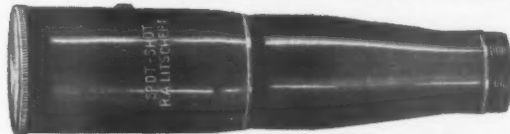
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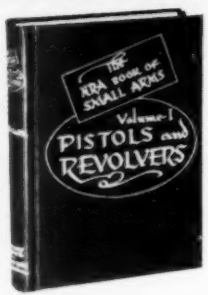
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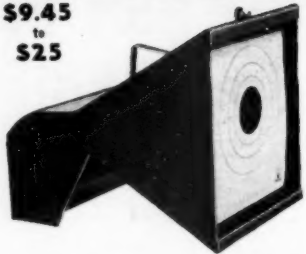
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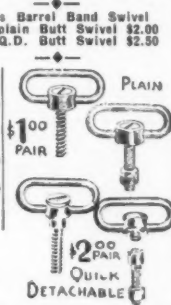
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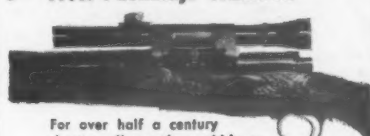
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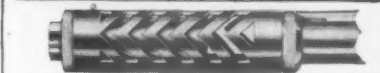
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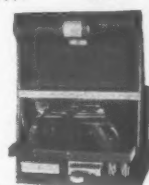


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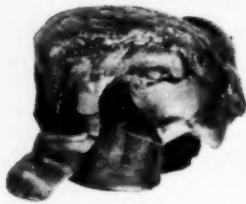
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It is common language that the .220 Swift is finicky. If you have fired one you are in a position to judge. This group fired by C. E. Purdie of Gopher Shooter's Supply, was the first 5 shots fired through a new model 70 target rifle. Distance was 100 yds. Group shown is actual size. We have a few of these fine rifles left.



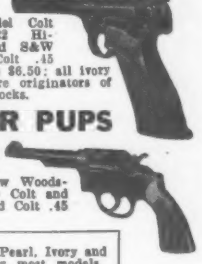
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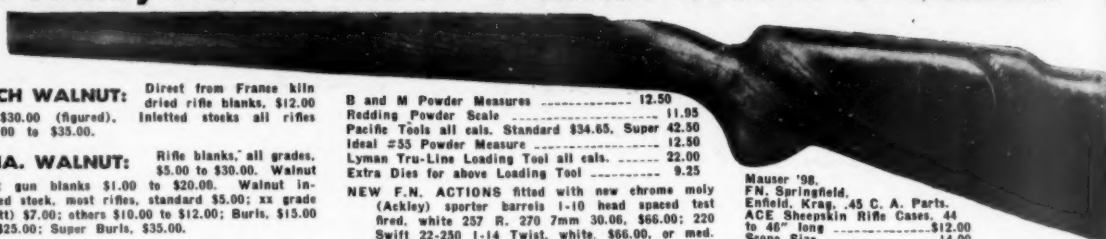
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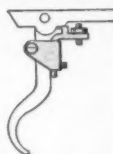
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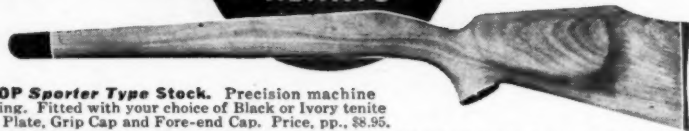
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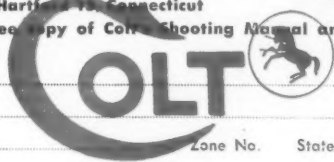
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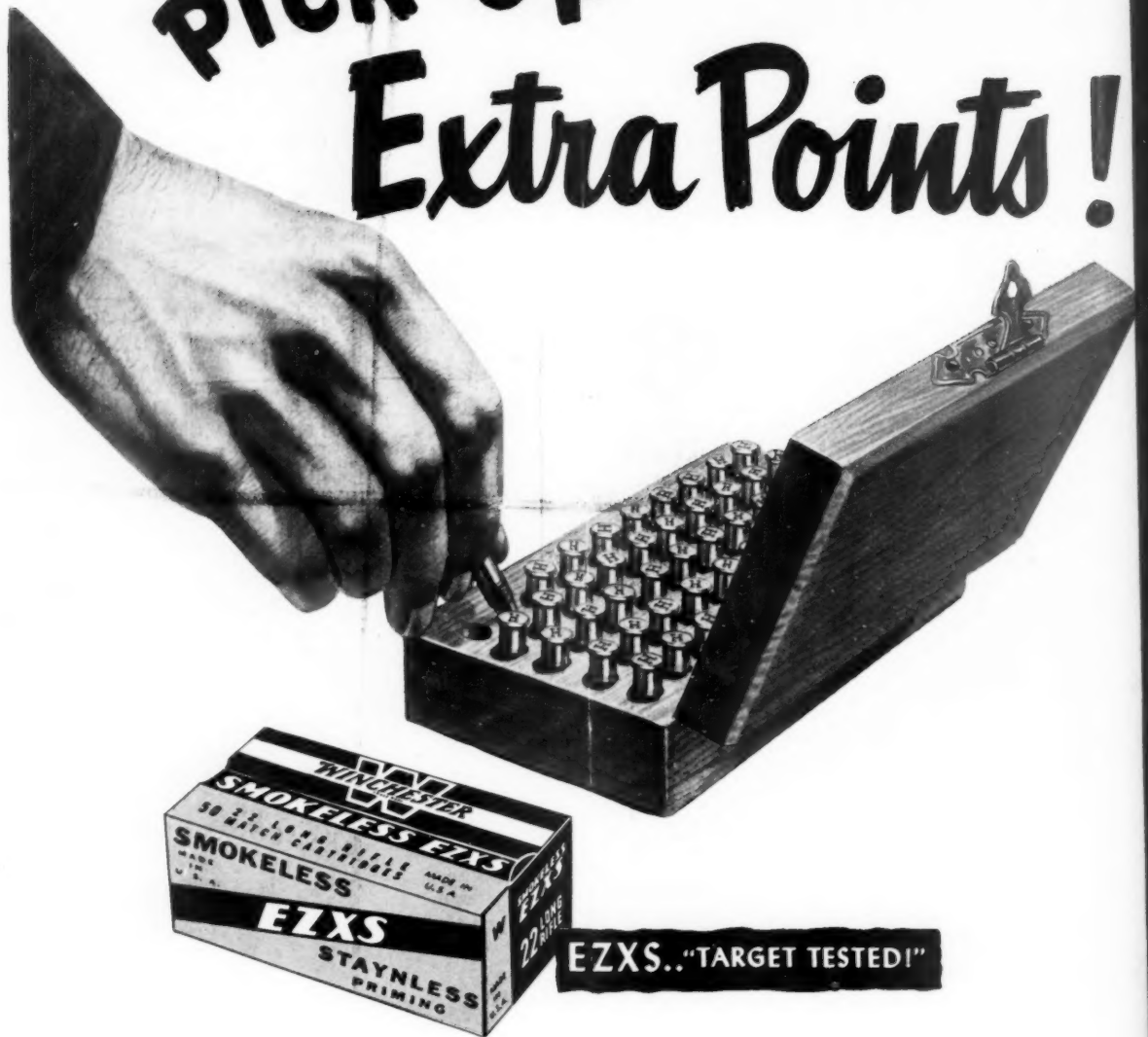
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